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SAFFORD DISTRICT

Resource Management Plan Environmental Impact Statement

• Draft •

U.S. Department of the Interior
Bureau of Land Management
Safford District
Arizona

BLM Mission

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based on the principles of multiple use and sustained yield, a combination of uses that will take into account the long term needs of future generations for renewable and non-renewable resources.

December 1989

BLM-AZ-PT-90-002-1600

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SAFFORD DISTRICT OFFICE
425 E. 4TH STREET
SAFFORD, ARIZONA 85546
(602) 428-4040

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January 1990

Dear Public Land User:

Enclosed is the draft Safford District Resource Management Plan and Environmental Impact Statement (RMP/EIS) for your review and comment. This document describes our proposed plan for management of 1.4 million acres of public land in southeastern Arizona.

The release of the draft RMP/EIS begins a 90-day comment period. During this period we encourage you to review the document and provide us with your comments about our proposals. To assist you, we have scheduled four open houses to discuss the draft RMP/EIS with you. The open houses will be informal and held from 2:00 - 5:00 p.m. and 7:00 - 9:00 p.m. at the following locations:

February 12, 1990	Safford	Old Armory Meeting Room 921 Thatcher Blvd.
February 13, 1990	Bisbee	Board of Supervisor's Hearing Room Cochise County Admin. Bldg., 2nd Floor
February 14, 1990	Tucson	Tucson Public Library Wilmot Branch 530 N. Wilmot Road
February 15, 1990	Winkelman	Central Arizona College Aravaipa Road & Highway 77

The comment period will end April 6, 1990. All comments must be postmarked by that date to ensure consideration in preparation of the final RMP/EIS. Please send your comments to: Steve Knox, RMP Team Leader, Bureau of Land Management, 425 E. 4th Street, Safford, AZ 85546.

Publication of this document is the result of a 2-year planning process where we have incorporated your comments and ideas into our proposals for management of the public lands. I want to thank you for your interest and encourage your continued involvement in the planning process.

Sincerely,

Ray A. Brady
District Manager

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Safford District
Resource Management Plan and Environmental Impact Statement
• Draft •

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Prepared by
U.S. Department of the Interior
Bureau of Land Management
Safford District
Arizona

Lynn Engdahl
Acting Arizona State Director

This Draft Environmental Impact Statement (EIS) describes and analyzes four alternatives for management of approximately 1,400,000 acres of public land in southeastern Arizona. The alternatives analyzed include Alternative A (the Preferred Alternative), Alternative B (a protection oriented alternative), Alternative C (a production oriented alternative) and Alternative D (the No Action Alternative).

For further information contact: Steve Knox, RMP Team Leader, Safford District Office, Bureau of Land Management, 425 East 4th Street, Safford, Arizona 85546 or call (602) 428-4040.

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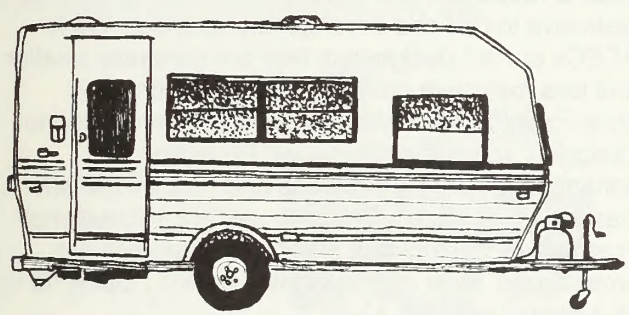
SUMMARY

Purpose and Need

This Resource Management Plan/Environmental Impact Statement (RMP/EIS) is being prepared to guide management of 1,400,000 acres of public land in the Safford District (southeastern Arizona) for approximately the next 15 years. The decisions in the RMP will determine which use or combination of uses will be emphasized in the District. The RMP will also decide which uses are not appropriate and where they will not be permitted.

The RMP will replace four existing Management Framework Plans (MFPs) - Winkelman, Geronimo, Black Hills and San Simon. These plans have guided BLM's management since the early 1970s. Much of the information used in preparation of the MFPs and the decisions of those plans that are still valid have been incorporated into this RMP. MFPs were never prepared for scattered parcels of public land in Cochise and southwestern Graham Counties. The decisions of this RMP will guide management of these areas.

In 1989, BLM completed a land management plan for 47,668 acres of public lands along the upper San Pedro River. The *San Pedro River Riparian Management Plan* (BLM 1989) provides direction for management of the natural and cultural resources of that property. During the preparation of the plan, Congress designated these lands and adjacent public lands as the San Pedro Riparian National Conservation Area (NCA). This RMP will incorporate the decisions of the *San Pedro River Riparian Management Plan* and set management direction for lands in the NCA not covered by that plan.



Issues and Management Concerns

This RMP is being prepared to resolve significant issues and management concerns about specific land management opportunities and problems. Four issues and 10 management concerns were identified for analysis in this planning process. The issues and concerns were identified by BLM managers and specialists and the public. The following issues and concerns were analyzed in this RMP.

Issue 1 - Access

Land ownership in southeastern Arizona varies from large blocks of public, National Forest and Indian reservation lands to small scattered tracts of public, State and private lands. The land pattern has resulted in the lack of physical and legal access to some public lands. In this RMP, BLM will identify areas where physical and legal access is needed to or across public lands for vehicle and foot or horse travel. The RMP will also identify areas where access should be restricted.

Issue 2 - ACECs and Other Types of Special Management

Public lands in the Safford District have a variety of important historic, cultural, scenic and natural values. Areas of Critical Environmental Concern (ACEC), wilderness and wild and scenic rivers are all types of special management that can be used to preserve unique and important resource values. In this RMP, BLM will analyze 34 ACEC nominations, two segments of the Gila and San Francisco Rivers as possible wild and scenic rivers, and lands adjacent to the existing Aravaipa Canyon and Galiuro Wilderness areas for possible addition to those areas.

Issue 3 - Off-highway Vehicles

Off-highway recreational vehicle (OHV) use has increased over the years and continues to grow. OHVs can cause significant damage to the environment if not used in the proper manner and in the proper location. BLM manages the public lands for use by OHVs, but their use must be carefully managed to prevent unacceptable impacts to the land and its resources. Through the RMP, BLM will identify lands that will be open, limited and closed to OHV use.

Issue 4 - Riparian Areas

Riparian areas are valuable because of their importance to watershed protection, water quality, wildlife, recreation opportunities and livestock. Special management attention is needed to ensure these fragile areas are protected and improved while providing for their use. In this RMP, BLM will determine the objectives for management of riparian areas and what actions will be taken to implement the objectives.

Ten management concerns are also being addressed in this RMP. They include:

- Management Concern 1 - Wildlife Habitat
- Management Concern 2 - Lands and Realty
- Management Concern 3 - Outdoor Recreation and Visual Resource Management
- Management Concern 4 - Energy and Minerals
- Management Concern 5 - Cultural Resources
- Management Concern 6 - Soil Erosion
- Management Concern 7 - Vegetation
- Management Concern 8 - Water Resources
- Management Concern 9 - Air Quality
- Management Concern 10 - Paleontological Resources

In this RMP, BLM will determine management objectives for each of these concerns and identify actions that will be taken to implement the objectives. Specific planning questions are identified in Chapter 1 - Purpose and Need for each issue and concern.

Description of the Alternatives

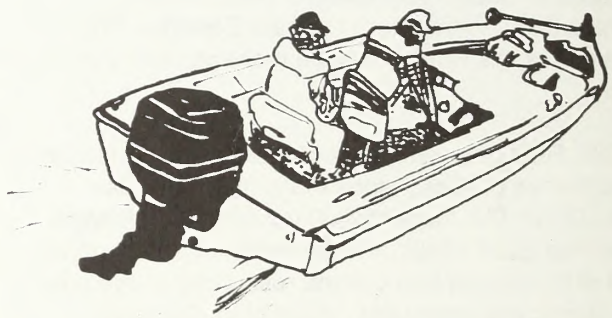
Four alternative plans (including the *Preferred Alternative*) have been developed to respond to the issues and concerns. Each alternative presents the land use objectives that will guide management of the public lands for the next 15 years and the actions BLM will carry out to accomplish those objectives. The following alternatives were analyzed in this RMP/EIS.

Alternative A (Preferred Alternative)

This alternative is BLM's preferred Resource Management Plan. It is designed to respond to the issues and management concerns in a manner that provides a balanced approach to multiple use management. It provides protection to sensitive resources that cannot tolerate disturbance from other activities. It also provides for the consumptive use and development of other resources.

Alternative B

This alternative emphasizes management and protection of natural and cultural resources while still providing for use and development of the public lands. More restrictions are applied to protect natural and cultural resources. This alternative designates larger areas as ACECs with more protective management prescriptions. It also recommends larger areas to Congress as wilderness and wild and scenic rivers. Priority wildlife species include T&E species and their habitat but not game species. Actions are proposed to protect water quality and quantity and additional management emphasis is given to protection and enhancement of riparian areas. The protection of cultural resources will be emphasized before use.



Alternative C

This alternative provides more emphasis to use and development of the public lands than *Alternative A or B*. Fewer areas are managed to protect natural and cultural resources and specific prescriptions are less restrictive to use and development activities. While ACECs are still designated, they are generally smaller and less restrictive on other uses. No wilderness areas or wild and scenic rivers are recommended to Congress under this alternative. Protection and enhancement of riparian areas and T&E wildlife species are emphasized. Scientific use and recreational/interpretive development of cultural resources are emphasized. Most of the planning area is "Open" to off-highway vehicles.

Alternative D (No Action)

This alternative continues implementation of the current land use plans. The allocation of lands and resources would remain unchanged. The analysis of the impacts of implementing *Alternative D* provides a basis for comparing the effects of the other three alternatives.

Environmental Consequences

The environmental consequences of implementing each alternative are analyzed in this RMP/EIS. The level of detail of the analysis for each element of the environment varies with the degree of anticipated impact or benefit. The planning team concluded that no significant impacts or benefits would occur to topography, air or climate with the implementation of any alternative.

Alternative A (The Preferred Alternative)

The selection of this alternative would give moderate to high benefits to paleontological and cultural resources through the protection measures provided by ACEC management. Elsewhere, the construction of Timber Draw detention dam would result in high impacts to archaeological sites in the project area, and require intensive mitigation prior to construction.

ACEC management would provide moderate benefits to wildlife habitat and high benefits to riparian vegetation. Restrictions on OHV use and mining and mineral leasing activities would also have high benefits for wildlife habitat by minimizing disturbance of wildlife and their habitat.

Restrictions on mining, mineral leasing activities and OHV use would provide low benefits to soil and water quality. Construction or repair of detention dams would have a moderate benefit to soil retention in the San Simon River channel and the Bear Springs Flat area. Upland vegetation would receive low benefits from land treatments and restrictions on OHV use.

Mineral withdrawals, "No Surface Occupancy" stipulations and restrictions on mineral material sales would have a low impact on segments of the local economy dealing with minerals extraction and exploration.

Increased primitive recreation use in ACECs, wilderness areas and wild and scenic rivers would provide low benefits to local communities through diversification of their tourism economies.

Alternative B

The implementation of this alternative would provide high benefits to paleontological resources by protecting known fossil deposits. Moderate benefits would be gained for wildlife habitat, riparian vegetation, cultural resources and soils. Upland vegetation would receive low benefits. The construction of Timber Draw detention dam would result in high impacts to archaeological sites in the project area. Low socio-economic impacts would result from mineral restrictions. Low economic benefits would result from ACEC, wilderness and wild and scenic river recreation use.

Alternative C

Management of ACECs would provide moderate benefits to riparian vegetation and cultural and paleontological resources. OHV use, however, would cause moderate impacts to riparian areas, wildlife habitat and cultural and paleontological resources due to disturbance caused by vehicles. The construction of Timber Draw detention dam would result in high impacts to archaeological sites but moderate benefits to soils by regrading a highly eroded area.

Mineral entry withdrawals, "No Surface Occupancy" stipulations for mineral leasing and prohibiting mineral material sales would provide low benefits to riparian vegetation, wildlife and their habitat and cultural and paleontological resources.

That portion of the local economy providing goods and services for OHV users would receive low benefits from the implementation of this alternative. The mineral industry and that part of the local economy providing goods and services to primitive recreation users would suffer a low impact due to decreased opportunities.

Alternative D

Adoption of this alternative would provide low benefits to water resources by controlling OHV activity that causes soil erosion and sedimentation of streams and rivers. This alternative would also provide moderate benefits to soil, wildlife habitat, riparian vegetation and cultural and paleontological resources. The construction of Timber Draw detention dam would result in high impacts to archaeological sites in the project area.

Mining and mineral leasing restrictions would cause low impacts to the economy. Designation of wild and scenic rivers and ACECs would provide low benefits to the economy of local tourism industries.

Mitigating Measures

No specific mitigating measures have been identified in this RMP/EIS that would reduce the anticipated impacts of implementing the Preferred Alternative. Mitigation will be incorporated when BLM begins implementing the specific actions of the RMP. At that time, an environmental assessment will be prepared to analyze the expected impacts of each project and identify needed mitigating measures to deal with those impacts.

Abbreviations

The following abbreviations are used in this document:

ACEC	Area of Critical Environmental Concern
AGFD	Arizona Game and Fish Department
AMP	Allotment Management Plan
BLM	Bureau of Land Management
CRMP	Cultural Resource Management Plan
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
HAZMAT	Hazardous Materials
HMP	Habitat Management Plan
IHICS	Integrated Habitat Inventory Classification System
IMP	Interim Management Policy and Guidelines for Lands Under Wilderness Review
MFP	Management Framework Plan
MSA	Management Situation Analysis
NCA	National Conservation Area
NEPA	National Environmental Policy Act
NPS	National Park Service
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
OHV	Off-highway Vehicle
ONA	Outstanding Natural Area
PLO	Public Land Order
RMP	Resource Management Plan
RNA	Research Natural Area
R&PP	Recreation and Public Purposes
R/W	Right-of-Way
SO	Secretarial Order
SRMA	Special Recreation Management Area
VRM	Visual Resource Management
WSA	Wilderness Study Area

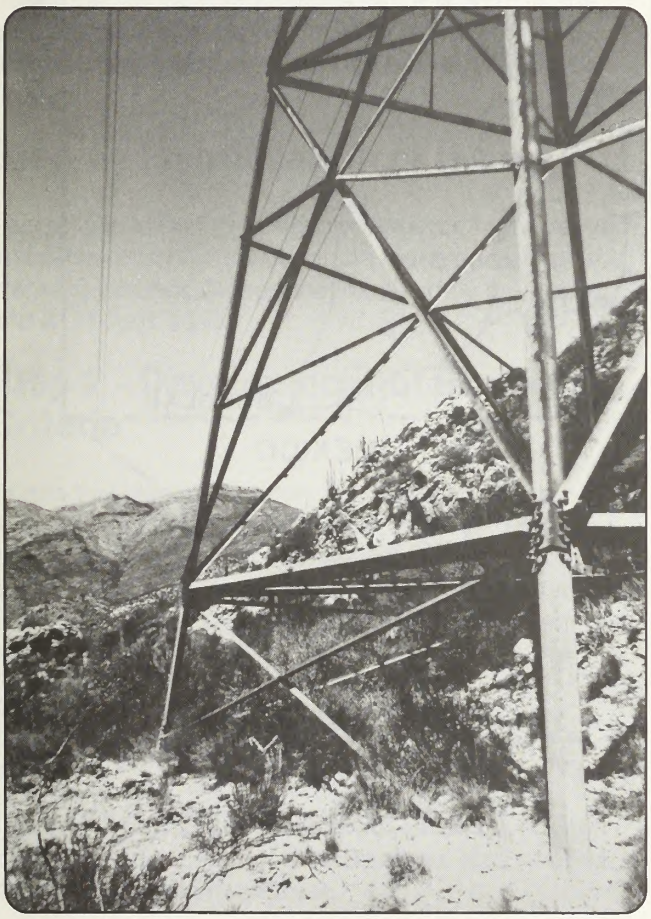
PURPOSE AND NEED

1

Introduction

The purpose of this Resource Management Plan (RMP) is to guide the management of the public lands and resources in the Safford District for the next 15 years. The decisions in the RMP will establish which use or combination of uses will be emphasized in the District. Decisions will also indicate which uses are not appropriate and where they would not be permitted. In certain cases, the RMP decisions will be specific and immediately implementable. In other instances, more specific activity plans and environmental analyses will be prepared before decisions can be implemented. Mitigating measures will be developed prior to implementation of the *Preferred Alternative*.

Section 202 of the *Federal Land Policy and Management Act of 1976* (FLPMA) requires the Secretary of the Interior to develop, maintain and revise land use plans for management of the public lands. To comply with FLPMA, this RMP was prepared for the Safford District. The approved plan will be reviewed, in accordance with monitoring plans, to determine its effectiveness and need for revision. Monitoring is a critical and never-ending step in the planning process.



High voltage power lines carry electricity across public lands.

The RMP will replace four existing Management Framework Plans (MFP). Much of the information collected for use in preparing the MFPs was used in preparation of the RMP. Similarly, many of the MFP decisions are still valid and are carried forward and incorporated into the RMP. Two of the District's Planning Units have never had a land use plan developed. One, the Cochise Planning Unit, is located in Cochise County west of the Dos Cabezas and Chiricahua Mountains and is part of the San Simon Resource Area. The other, the San Pedro Planning Unit, is located in northern Cochise and southwestern Graham Counties and is part of the Gila Resource Area. These two units are contiguous to one another and are comprised of scattered tracts of public lands among large blocks of State or private lands.

In 1989 BLM completed a land management plan for 47,668 acres of public land along the upper San Pedro River. The *San Pedro River Riparian Management Plan and Environmental Impact Statement* (BLM 1989) provides direction for management of the natural and cultural resources of the property. During the preparation of the San Pedro plan, Congress designated these lands and adjacent public lands as the San Pedro Riparian National Conservation Area (NCA). Management direction for the adjacent lands was not determined in the San Pedro plan. It will be made in this RMP, consistent with legislation and the San Pedro plan. The management decisions of the *San Pedro River Riparian Management Plan and Environmental Impact Statement* are incorporated into this RMP.

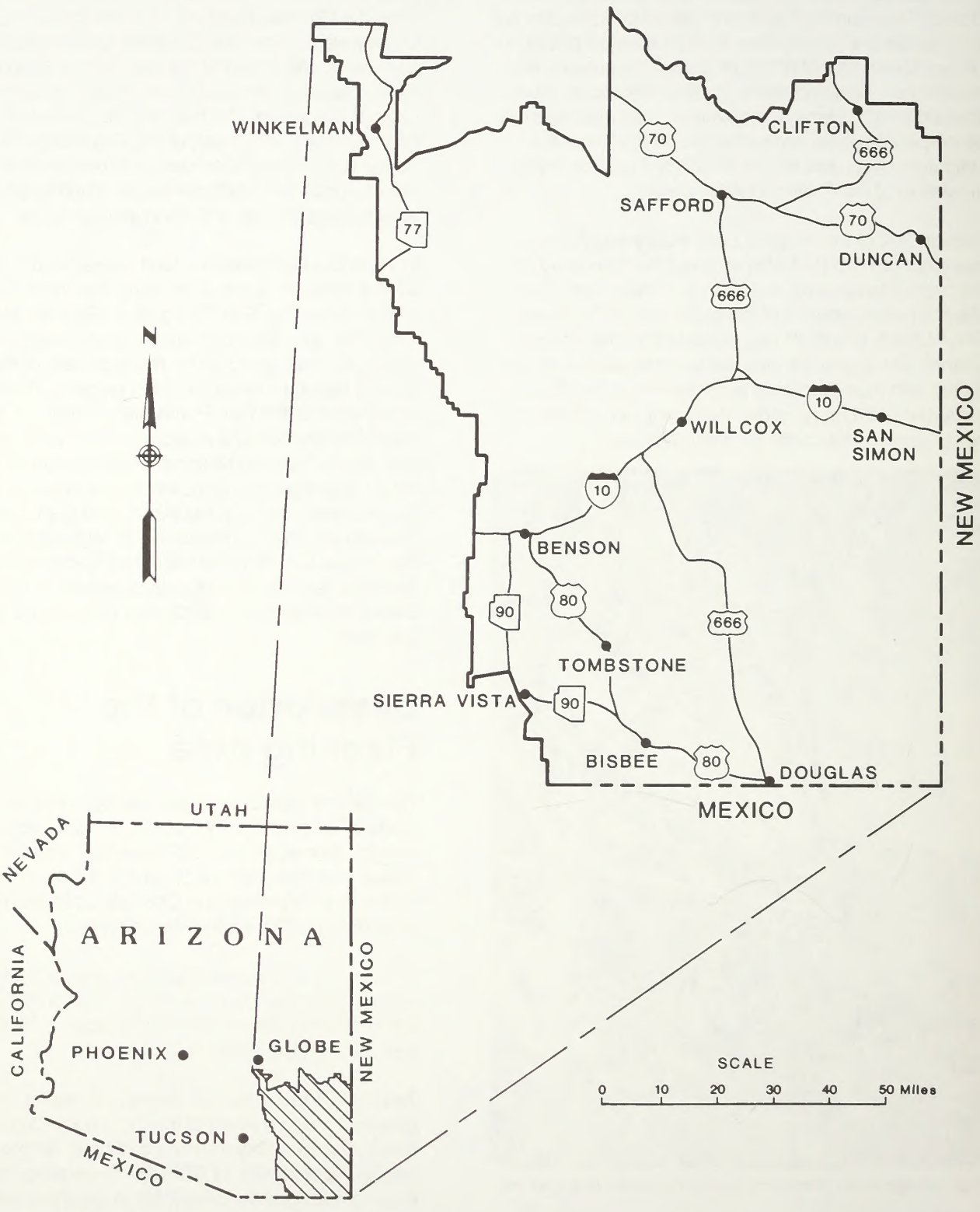
Description of the Planning Area

The Safford District provides management for over 1,400,000 acres of public land in southeastern Arizona (see the following RMP/EIS Area Map and the Land Status Map inside the back cover). It encompasses all of Graham, Greenlee and Cochise Counties and portions of Pinal, Pima and Gila Counties.

The District is in a sparsely populated part of the State. Larger communities include Sierra Vista, Safford/Thatcher, Clifton/Morenci, Duncan, Willcox, Douglas, Bisbee, Benson and Winkelman.

The District lies within the Basin and Range Physiographic Province south of the Colorado Plateau. The area's northwesterly trending mountain ranges reach elevations of almost 11,000 feet. Separating these mountain ranges are broad, flat or gently sloping basins. Public lands range in elevation from about 1,900 feet to 7,500 feet.

SAFFORD DISTRICT RMP/EIS AREA



The Safford District administers a variety of programs on public lands in the planning area. Historically, management emphasis has been on livestock grazing, mining, wildlife habitat, recreation, watershed and land and realty actions. Increasing demands for management of cultural resources, wilderness, and other multiple-use programs necessitates BLM maintain up-to-date land use plans.

Planning Process Overview

Resource Management Plans are prepared to resolve significant issues and management concerns about specific land management opportunities and problems. Issues and concerns are identified by BLM specialists and managers and the public at the onset of the planning process. Various alternatives to resolve the issues and concerns are developed and analyzed in compliance with the *National Environmental Policy Act* (NEPA). The RMP that results from this process will provide the manager with solutions to the issues and concerns and specific guidance for management of all resources throughout the District.

Under the planning regulations (43CFR 1610.4), the preparation and implementation of an RMP is completed in nine steps as described below (see Figure 1).

Step 1 - Identification of Issues

This step is intended to identify resource management problems or conflicts that can be resolved through the planning process. Issues are identified by the public and BLM specialists.

Step 2 - Development of Planning Criteria

During this step, preliminary decisions are made regarding the kinds of information needed to resolve the issues, the kinds of alternatives to be developed and the factors to be considered in evaluating alternatives and selecting a preferred resource management plan.

Step 3 - Collection of Inventory Data and Information

This step involves the collection of resource, environmental, social, economic or institutional data needed for completion of the process.

Step 4 - Analysis of the Management Situation

This step calls for an assessment of the current situation. It includes a description of current BLM management guidance, discussion of existing problems and opportunities to resolve them and consolidation of existing data that is needed to analyze and resolve the identified issues.

Step 5 - Formulation of Alternatives

During this step, several resource management alternatives are prepared; including one for no action and others that strive to resolve the issues while placing emphasis either on environmental protection or resource production.

Coatis are raccoon-like mammals found in rocky wooded canyons such as Guadalupe Canyon.

Step 6 - Estimation of the Effects of Alternatives

The physical, biological, economic and social effects of implementing each alternative are estimated in order to allow for a comparative evaluation of impacts.

Step 7 - Selection of the Preferred Alternative

Based on the information generated during Step 6, the District Manager identifies a preferred alternative. The draft RMP/EIS document is then prepared and distributed for public review.

Step 8 - Selection of the Resource Management Plan

Based on the results of public review and comment, the District Manager will select a proposed resource management plan and publish it along with a final EIS. A final decision is made after a 30-day protest period on the final EIS.

Step 9 - Monitoring and Evaluation

This step involves the collection and analysis of long-term resource condition and trend data to determine the effectiveness of the plan in resolving the identified issues. Monitoring will also assure that implementation of the plan is achieving the desired results. Monitoring continues from the time the RMP is adopted until changing conditions require a revision of the plan.

Planning Issues and Management Concerns

The BLM planning process relates resource management planning to solving land use problems. Significant or controversial land use problems are referred to as issues. An issue may be of a general nature, such as a particular program, or more specific, such as how that particular program affects a specific area. Some issues cannot be resolved through the planning process, but require policy changes or even legislation for a solution. In addition to issues, other land use problems of a less controversial nature are also evaluated. These are referred to as management concerns and are resolved in the same manner as issues to improve management of the public lands. Issues and management concerns are identified by BLM specialists and the public.

Issue-driven planning means that only those parts of current management direction that are believed to be at issue are analyzed through the formulation and evaluation of alternatives. Alternatives are not developed for those parts of current management believed to be satisfactory.

Issues Addressed

Four issues and 10 management concerns are addressed in this document. These issues and management concerns were identified based on the judgement of planning team members, interagency consultation, public input and review by BLM managers.

Issue I - Access

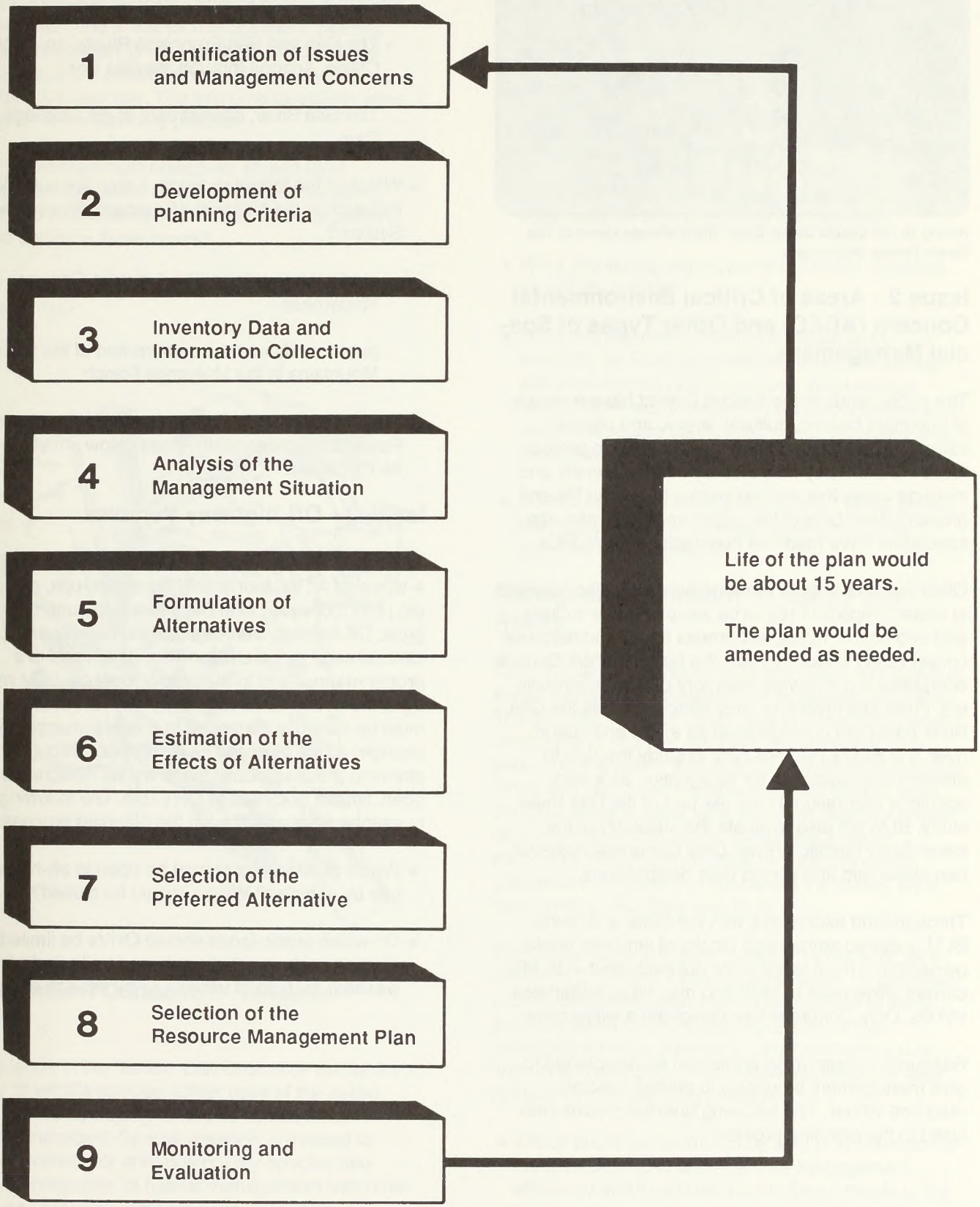
Land ownership in southeastern Arizona varies from large blocks of public, national forest and Indian reservation lands to small scattered tracts of public, State and private lands. Public use of State, national forest and public lands is often obstructed by the lack of physical or legal access. In some cases, no roads or trails exist to provide access. More often, however, roads exist but the public has no legal right to use them because they cross private property or other lands where use is not permitted without the appropriate authorization. Access problems also prevent BLM from administering the public lands. The following questions were analyzed in the planning process.

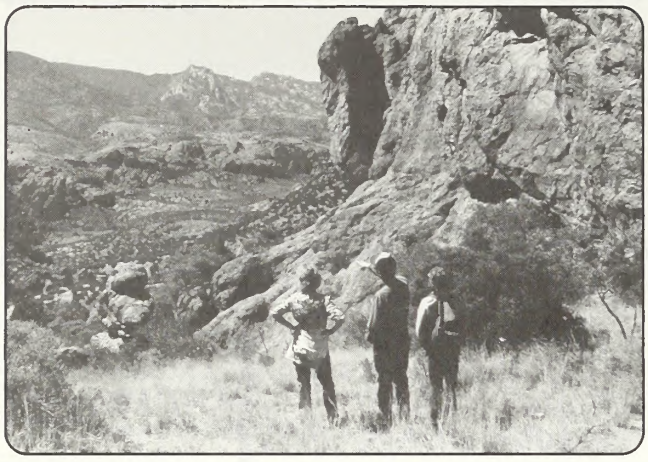
- Where should BLM provide access to or across public lands and what type of access is needed?
- What actions should BLM take to provide access to or across public lands?
- How should BLM coordinate with other land and resource management agencies and private landowners to ensure access to State, national forest and public lands?

Fences are used to divide pastures to facilitate livestock management and to exclude grazing from sensitive areas.

STEPS IN THE RESOURCE MANAGEMENT PLANNING PROCESS

Figure 1





Hiking to the saddle below Black Rock affords views of the Santa Teresa Wilderness.

Issue 2 - Areas of Critical Environmental Concern (ACEC) and Other Types of Special Management

The public lands in the Safford District have a variety of important historic, cultural, scenic and natural values. ACEC designations may be used to protect these values. They may also be used to identify and manage areas that are hazardous to human life and property. Members of the public and BLM resource specialists have made 34 nominations for ACECs.

Other types of special management may also be used to protect important resource values. These include wild and scenic rivers, wilderness areas and resource conservation areas. In 1982, the National Park Service completed a nationwide inventory of free-flowing rivers. From that inventory, they concluded that the Gila River deserved consideration as a wild and scenic river. It is BLM's responsibility to study the Gila to determine its suitability for designation as a wild, scenic or recreational river. As part of the Gila River study, BLM will also evaluate the suitability of the lower San Francisco River. Only Congress, however, can make wild and scenic river designations.

Through land exchanges with the State of Arizona, BLM acquired some large blocks of land into public ownership. These lands were not evaluated in BLM's current wilderness studies and may have wilderness values. Only Congress can designate a wilderness.

Resource conservation areas can be designated to give management emphasis to protect special resource values. The following questions were analyzed in the planning process.

- Which public lands, if any, should be designated as ACECs? How should they be managed?
- Which of the following rivers, if any, are suitable for inclusion in the National Wild and Scenic River System and how should they be managed?
  - The Gila and San Francisco Rivers, south of Clifton, Arizona through the Gila Box
  - The Gila River, downstream of the Coolidge Dam
- Which of the following areas, if any, are suitable for inclusion in the National Wilderness Preservation System?
  - public lands adjacent to Aravaipa Canyon Wilderness
  - public lands on the southern end of the Galiuro Mountains in the Muleshoe Ranch
- Which public lands, if any, should be designated as Resource Conservation Areas? How should they be managed?

Issue 3 - Off-highway Vehicles

The use of off-highway recreational vehicles (3- and 4-wheeled ATVs, four-wheel drive pick-ups, dirt bikes, etc.) has increased over the years and continues to grow. Off-highway vehicles (OHVs) can cause significant damage to the environment if not used in a proper manner and in the proper location. BLM manages the public lands for use by OHVs, but their use must be carefully controlled to prevent unacceptable changes to the land and its resources. Through this planning process, public lands will be designated as open, limited or closed to OHV use. The following questions were analyzed in the planning process.

- Which public lands should be open to off-highway use by vehicles? Which should be closed?
- On which public lands should OHVs be limited to existing or designated roads and trails (including washes), by type of vehicle, or by season of use?

Issue 4 - Riparian Areas

Riparian areas are valuable because of their importance to watershed protection, water quality, aquatic and terrestrial wildlife, threatened and endangered species, cultural resources, recreation opportunities and livestock management. Special management attention is needed to ensure these fragile areas are protected and improved while providing for their use. The following questions were analyzed in the planning process.

- What management objectives should BLM establish for riparian areas to provide for the various public demands for use, and still protect and enhance these areas?
- What actions should BLM take to achieve these objectives?

Management Concern 1 - Wildlife Habitat

Public lands in the Safford District provide habitat for a variety of wildlife species. Other uses of the public lands can be damaging to wildlife habitat if not properly managed. Special attention is needed to restore, maintain or enhance priority species and habitats. Integration of habitat management with other resource programs requires careful planning to minimize impacts to these species and habitats while still providing for other uses of the public lands. The following questions were analyzed in the planning process.

- What species and habitats should receive management priority? What maintenance, improvement and expansion objectives should BLM establish for those species and habitats?
- For which priority areas should Habitat Management Plans be prepared?
- What actions should BLM take to achieve the objectives for priority species and habitats?
- What monitoring objectives should BLM establish for priority habitat?
- What management objectives should BLM establish for State and federally listed threatened and endangered (T&E) species? What actions should BLM take to improve habitat conditions and resolve resource conflicts for listed, proposed and candidate T&E species?
- Where, by what methods and at what times of the year should animal damage (predator) control activities be authorized?

Management Concern 2 - Lands and Realty

Over the last three years, BLM has been very active in a land ownership adjustment, or exchange, program. The purpose of the program was to consolidate land ownership to improve resource management and service to the public and to bring into public ownership lands with significant multiple resource values. Over 250,000 acres of State land and large areas of private land have come into public ownership through exchange. Other opportunities for land ownership adjustment still exist that will benefit the public, local communities, the State and BLM.

The public lands are used by the private sector for a variety of purposes, including powerlines, oil pipelines and telecommunication sites. Authorization of these activities takes careful planning to ensure that significant adverse impacts to other resource values and uses do not occur. The following questions were analyzed in the planning process.

- Which public lands should be sold or exchanged to improve BLM land and resource management efficiency and to provide for the future needs of the public and local communities?

- What types of lands should BLM acquire through purchase or exchange to support its resource management programs?

- Which lands should be retained in public ownership to be managed for their various values in a combination that will best serve the needs of the American people?

- Which public lands should be designated right-of-way corridors, communication sites, avoidance areas and exclusion areas?

- What terms and conditions should be applied to right-of-way grants for corridors and communication sites and for use outside corridors and communication sites?

- Which existing public land transportation and utility corridors should not be designated as right-of-way corridors upon plan approval?

Management Concern 3 - Outdoor Recreation and Visual Resource Management

Recreation use of the public lands continues to increase. Demand for developed recreation sites and open space for more dispersed activities can, at least in part, be satisfied through recreation use of the public lands. Recreation opportunities also contribute to tourism in Arizona, benefitting the economies of communities, counties and the State. BLM also manages visual resources to maintain the scenic quality of the public lands. The following questions were analyzed in the planning process.

- Which public lands should be managed with emphasis on outdoor recreation opportunities?

- What recreation setting should be maintained and for what activities should BLM provide?

- What recreation management strategies should be developed and what actions should BLM take to maintain established recreation settings?

- What recreation activity planning priorities should BLM establish for the District?

- Which public lands should be identified and managed for interpretation of natural and cultural resources and public education?

- Which roads, sites and facilities should be signed to provide for public information, interpretation and safety?

- What visual resource management objectives should BLM establish for recently acquired lands? Existing public lands?

Remains of historical buildings can be seen along Guadalupe Canyon in extreme southeastern Arizona.

Management Concern 4 - Energy and Minerals

It is Bureau policy to foster and encourage the development of energy and mineral resources. Regulations require that mining operations be carried out in a manner that does not cause undue or unnecessary degradation of the environment. BLM has the authority and responsibility to ensure environmental degradation does not occur on public lands. Careful consideration is given to mitigate, where possible, potential impacts of mining operations on other resource values. Mitigation, however, may not prevent all impacts to other resource values. BLM also has the authority to include stipulations with energy and mineral leases to avoid adverse impacts to other resource values. Utilization of energy and mineral resources, while providing for environmental protection, requires careful analysis. The following questions were analyzed in the planning process.

- Which public lands should be open to oil and gas and geothermal energy development subject to the terms and conditions of the standard lease form, minor constraints such as seasonal restrictions or major constraints such as no surface occupancy?

- Which public lands should be closed to oil and gas and geothermal energy leasing?

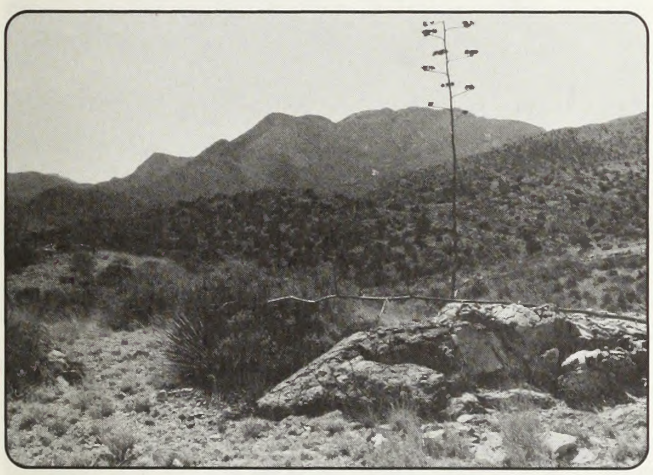
- What management direction should BLM establish for existing leases, lease stipulations, stipulation waivers and geophysical exploration?

- Which public lands should be open to the operation of the mining laws? Which should be closed?

- What terms, conditions or special stipulations should be applied to open areas that may constrain operation of the mining laws?

- Which public lands should be open to mineral material (sand, gravel, etc.) disposal? Which should be closed?

- What terms, conditions or special stipulations should be applied to open areas that may constrain mineral material disposal activities?



Rolling hills around Ft. Bowie National Historic Site provide hiking opportunities, and contain parts of the historic Butterfield Stage Route.

Management Concern 5 - Cultural Resources

Cultural resources are an important link to our past. Understanding this link will help BLM in planning for the future. BLM manages cultural resources for their scientific, historic and management information; sociocultural, educational, recreational or other public values; and to maintain them in their present condition. The resource management plan presents an opportunity to set direction for management of cultural resources on the public lands. The following questions were analyzed in the planning process.

- What management objectives should BLM establish for cultural resources in the District?

- What actions should BLM take to achieve these objectives?

Management Concern 6 - Soil Erosion

Measures to control soil erosion in the San Simon Watershed and to reclaim eroded land have been underway since the 1930s. Since the 1950s, BLM has built structures on the main and side channels of the San Simon River and reseeded over 12,000 acres of the watershed for that same purpose. While channel structures have produced the desired results, seedings have met with minimal success. Special attention is needed to determine if further structural work will be required to complete rehabilitation of the watershed. The following questions were analyzed in the planning process.

- What objectives should BLM establish for management of soils in the San Simon Watershed and what actions should be taken to achieve those objectives?

- What objectives should BLM establish to reduce the salinity of water and what actions should be taken to achieve those objectives?

Management Concern 7 - Vegetation

Vegetation is an integral part of an ecosystem and how BLM manages that resource will affect the health of the environment. Careful consideration needs to be given to how BLM should manage firewood cutting, threatened and endangered species, re-establishment of vegetation and land treatments for enhancement of vegetation. The following questions were analyzed in the planning process.

- Which public lands should be available for firewood cutting and what terms and conditions should be applied to a permit to cut firewood?
- What management objectives should BLM develop for re-establishment of upland vegetative species and what actions should be taken to achieve those objectives?
- What management objectives should BLM establish for protection and enhancement of threatened and endangered species and what actions should be taken to achieve those objectives?
- On which public lands should land treatments (vegetation manipulation) be used to protect, restore, establish or enhance vegetation species? What types of treatments should BLM use (root plow, herbicides, prescribed fire, etc.)?

Management Concern 8 - Water Resources

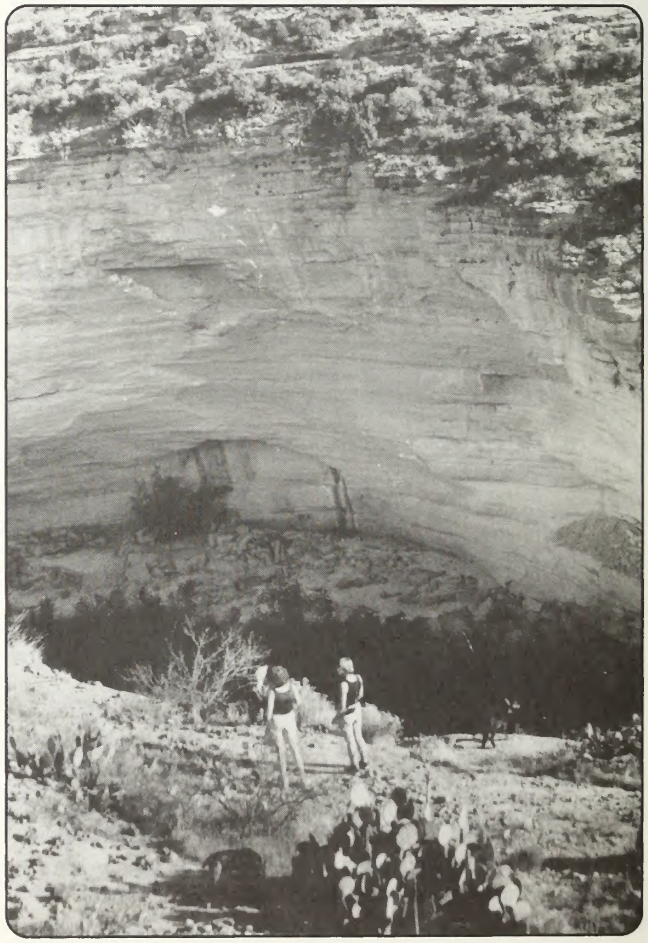
In the dry environment of the Southwest, water is often the limiting factor to use of the public lands. It supports the biological resources of the region and the people who use the land. Maintenance of water quality and quantity is critical to the well-being of the environment, the public and many of BLM's programs. The following questions were analyzed in the planning process.

- What groundwater management objectives should BLM establish for the District and what actions should be taken to achieve those objectives?
- For which public lands should water management plans be prepared?
- What water quality objectives should BLM establish for the District and what actions should be taken to achieve those objectives?
- Where should Unique Waters designations be made? How should BLM manage these areas if designated?
- Where should BLM focus its efforts to secure instream flows for riparian, wildlife and recreation purposes?

Management Concern 9 - Air Quality

Under the *Clean Air Act*, public lands were given Class II air quality status. This classification allows for moderate deterioration of air quality associated with moderate, well-controlled industrial and population growth. Some activities that take place on public lands may have impacts on air quality, but the activities must comply with the *Clean Air Act* standards. The following questions were analyzed in the planning process.

- What management objectives should BLM establish for maintenance of air quality in the District?
- What actions should BLM take to achieve these objectives?



Hikers above Oak Grove Canyon view the Goat Corral amphitheater in the canyon below.

Management Concern 10 - Paleontological Resources

Paleontological resources (fossils) are known to exist at several locations throughout southeastern Arizona. This planning process presents an opportunity to set direction for how these resources should be managed for the public benefit. The following questions were analyzed in the planning process.

- What management objectives should BLM establish for paleontological resources?
- What actions should BLM take to achieve these objectives?

Issues Considered But Not Analyzed

A few issues were identified early in the process, but were not analyzed in detail. They include:

Livestock Grazing - The *Upper Gila-San Simon Grazing Environmental Impact Statement* was completed in 1978 and its decisions have been implemented since then. Monitoring studies are in place and analysis indicates that the rangeland condition is improving under the present management. Present management has the flexibility to modify grazing levels and seasons, where necessary. In addition, the *Eastern Arizona Grazing Environmental Impact Statement* was completed in 1987 and the decisions made in that document are beginning to be implemented.

Wilderness - Districtwide wilderness studies were completed in 1989. Recommendations for wilderness designation will be forwarded to Congress. Large blocks of State land, acquired through exchange, that have not been evaluated for wilderness suitability will be analyzed in the planning process. A Districtwide re-evaluation is not warranted at this time.

Herbicides and Pesticides - An environmental impact statement is being prepared to provide Bureauwide guidance on the use of pesticides and herbicides. If chemicals are approved for use, site specific environmental analyses will be prepared for each project proposing the use of herbicides or pesticides.

Planning Criteria

Planning criteria were developed and revised at several points during the planning process to assure that the planning steps were focused on the issues and concerns. Planning criteria are factors BLM will evaluate to develop answers to the issues and management concerns. They help establish the limits of the analysis that is needed to resolve the issues and concerns. The criteria analyzed are available for review at the Safford District Office.

DESCRIPTION OF ALTERNATIVES 2

Introduction

Four alternative land use plans, including the *Preferred Alternative*, are described in this chapter. Each alternative presents the land use objectives that will guide management of the public lands for the next 15 years and the actions BLM will implement to carry out those objectives. A section is also included that identifies general management guidance common to all alternatives. General management guidance is based on the laws, regulations and policies that guide BLM's management of the public lands regardless of the alternative chosen for implementation through this RMP.

Decisions concerning management of livestock on public lands and management of the San Pedro Riparian National Conservation Area (NCA) have been developed through the *Upper Gila-San Simon Grazing Environmental Impact Statement* (BLM 1978), *Eastern Arizona Grazing Environmental Impact Statement* (BLM 1986) and *San Pedro River Riparian Management Plan and Environmental Impact Statement* (BLM 1989). These decisions are incorporated into this RMP/EIS by reference and are common to all alternatives.

Recommendations to Congress concerning the suitability of 14 wilderness study areas in the District for designation as wilderness were developed through the *Safford District Wilderness Environmental Impact Statement* (BLM 1987), *Arizona Mohave Wilderness Environmental Impact Statement* (BLM 1989) and *Environmental Impact Statement for the Coronado National Forest Plan* (Forest Service 1986). These recommendations are incorporated into this RMP/EIS by reference and are common to all alternatives (see Table 3-6).

To provide the public and decision-maker with a tool for comparing impacts and reaching conclusions, Chapter 2 ends with a summary of the environmental consequences of implementing each alternative (see Table 2-23).

Alternative Formulation

Both the *National Environmental Policy Act* (NEPA) and BLM planning regulations require the formulation of a range of alternatives. Each alternative represents a complete and reasonable plan for management of the public lands and resources for the next 15 years.

One alternative must represent no action, meaning no change from present management guidance. Other alternatives must provide a reasonable range of choices for management of the public lands. The range usually varies from resource protection to resource production. The following criteria were evaluated in the development of the alternatives.

1. Each alternative will provide for protection of proposed and listed species and their habitat and efforts to recover those species, as required by the *Endangered Species Act*.

2. Each alternative will provide for protection of significant cultural resources as required by the *National Historic Preservation Act* and the *Archaeological Resources Protection Act*.

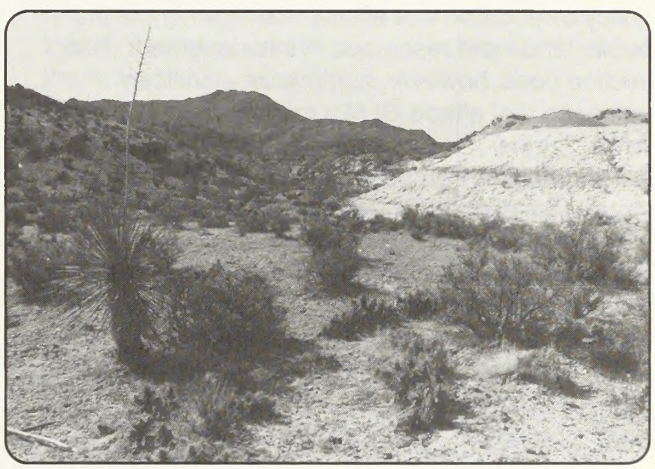
3. Each alternative will assume a continuation of existing interagency cooperative agreements.

4. Each alternative will be reasonable and attainable.

5. At least one alternative will comply with the No Action requirement of the Council on Environmental Quality regulations (40 CFR 1502.14(d)).

The goal of any alternative is to develop guidance that responds to the issues and management concerns identified for resolution in the RMP.

The four alternatives analyzed in this EIS were developed around the following general themes: no action; resource protection; resource production; and a balance of multiple uses between production and protection of lands and resources *(Preferred Alternative)*.



Outcrops of white diatomaceous earth are visible in portions of the 111 Ranch.

Alternatives Considered But Not Analyzed

No other specific alternatives were considered for analysis in this EIS. Variations of the four basic themes were considered, but none were carried forward. The four themes present a full and reasonable range of alternatives for management of the public lands and comply with the requirements of NEPA and BLM regulations and policies.

Alternative Evaluation Criteria

The following criteria will be considered in the evaluation of each alternative.

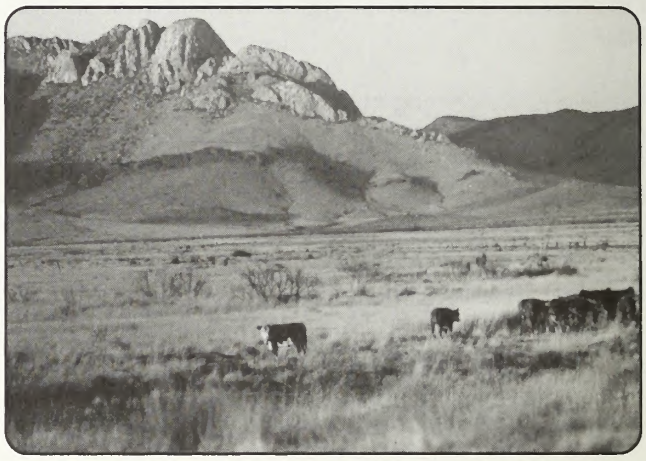
1. Significant social and economic effects.
2. Consistency with federal, State and local plans.
3. Compatibility with adjacent land uses.
4. Implementation requirements.
5. Significant impacts to resource values such as wildlife habitat condition, watershed and water quality/quantity, recreation opportunities, historic and prehistoric archaeological sites and threatened and endangered species.

Management Guidance Common to All Alternatives

It is not possible to discuss every law, regulation, policy or decision that affects management of the public lands and resources in this document. This section does, however, summarize significant guidance that affects BLM's management of the public lands. Further information about the development of the alternatives can be found in the *Gila Resource Area Management Situation Analysis* (MSA) (BLM 1989) and *San Simon Resource Area Management Situation Analysis* (BLM 1989). The MSAs, prepared in the early stages of the planning process, included an analysis of the issues and management concerns and led to the development of the RMP alternatives. They are available for review in the Safford District Office and incorporated into this EIS by reference.

The guidance provided in strategic plans or special emphasis programs like Fish and Wildlife 2000, Recreation 2000, Desert Tortoise Rangewide Plan, etc. will be incorporated into all alternatives considered in this plan.

BLM will evaluate any action proposed on the public lands to determine the impacts it will have on the environment. An environmental assessment (to the appropriate level of detail) will be conducted for every proposal on the public lands. In addition, all actions proposed in specific activity plans (allotment management plans, habitat management plans, wilderness management plans, etc.) will be coordinated with other programs.



Over 11,000 cattle graze public rangelands in the Safford District.

Issue 1 - Access

Bureau policy (BLM Manual 9110) provides for transportation planning. A transportation plan portrays the transportation system (roads and trails), the access needs identified in the RMP and subsequent activity and project plans. Through the RMP, decisions will be made where legal access for vehicle, horse and foot travel is needed across State and private lands; where construction of roads or trails is needed to provide access to public lands; and where existing access needs to be closed to protect resource values. Upon completion of the RMP, these decisions will be incorporated into the District Transportation Plan. The plan will also address road and trail maintenance needs.

It is BLM's policy to provide private property owners reasonable means of access across public lands to their property. This may vary from foot or horse travel to construction of a road, depending on the need for access.

Issue 2 - Areas of Critical Environmental Concern (ACEC) and Other Types of Special Management

Management plans will be written for each ACEC designated through this RMP. The ACEC management plans will identify the actions BLM will take to implement the specific management prescriptions. The complexity of the issues surrounding a particular ACEC will determine the detail of the management plan.

The three research natural area (RNA) ACECs recommended in the *San Pedro River Riparian Management Plan and Environmental Impact Statement* (BLM 1989) will be designated in this plan under all alternatives (see Map 32). Management plans will be prepared for each area following designation.

The wilderness recommendations of the *Safford District Wilderness Environmental Impact Statement* (BLM 1987), *Arizona Mohave Wilderness Environmental Impact Statement* (BLM 1989) and *Environmental Impact Statement for the Coronado National Forest Plan* (Forest Service 1986) will be carried forward under every alternative analyzed in this plan (see Table 3-6). These recommendations will be forwarded to Congress for their action. All wilderness study areas will be managed under the *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (BLM 1987), to protect their wilderness values, until designated wilderness or released by Congress for other uses. Those areas released from wilderness review will be managed by the decisions in this RMP. Aravaipa Canyon Wilderness and any other areas designated wilderness during the life of this plan will be managed in accordance with the Bureau's wilderness management policy (BLM Manual 8560) and the enacting legislation.

Issue 3 - Off-highway Vehicles

It is Bureau policy (BLM Manual 8340) that off-highway vehicle use is an acceptable use of the public lands wherever it is compatible with established resource management objectives. The *Federal Land Policy and Management Act of 1976* (FLPMA), Executive Orders 11644 and 11989 and Bureau policy (BLM Manual 8342) also state that all public lands will be designated as open, closed or limited to off-highway vehicle use to meet public demands, protect resources and public safety and minimize conflicts.

Issue 4 - Riparian Areas

Bureau policy sets the following direction for management of riparian areas.

1. Achieve riparian area improvement and maintenance objectives through the management of existing uses, wherever feasible.

2. Ensure that new resource management plans and activity plans, and revisions of existing plans, recognize the importance of riparian values and initiate management to maintain, restore or improve them.

3. Prescribe management for riparian values based upon site-specific characteristics and settings.

4. Give special attention to monitoring and evaluating management activities in riparian areas and revise management practices where site-specific objectives are not being met.

5. Cooperate with and encourage the involvement of interested federal, State and local governments and private parties to share information, implement management, coordinate activities, and provide education on the value, productivity and management of riparian areas.

6. Retain riparian areas in public ownership unless disposal would be in the public interest, as determined by land use planning.

7. Identify, encourage and support research and studies needed to ensure that riparian area management objectives can be properly defined and met.

Further, *Fish and Wildlife 2000* (BLM 1987) directs BLM to implement riparian management, protection and restoration efforts so that at least 75 percent of riparian areas are in good or better ecological condition by 1997.

From 1986 to 1988, BLM acquired 47,668 acres along the upper San Pedro River between the Mexican border and St. David. In 1987, BLM began preparing the *San Pedro River Riparian Management Plan* (BLM 1989) to protect and enhance the significant natural and cultural resources of the property. The plan was completed in 1989. In 1988, during preparation of the plan, Congress designated 54,189 acres of public land as the San Pedro Riparian National Conservation Area (NCA). Since this designation came in the middle of the planning process, BLM decided to complete its plan for management of the 47,668 acres and address the remaining 6,521 acres of the NCA in this RMP.

The *San Pedro River Riparian Management Plan* provides management direction for the riparian corridor and the adjacent uplands (47,668 acres) in the NCA. That plan was developed independently of this RMP and the decisions of that plan will be incorporated by reference in all alternatives considered in this EIS. Generally, the plan provides a framework for protection of the NCA, allowing those uses that are compatible with preservation of the NCA. Energy and mineral uses are not permitted, nor are sand and gravel operations. Livestock grazing has been prohibited for the life of the plan. Dispersed and developed recreation is being carefully planned to avoid impacts to the abundant natural, cultural and paleontological (fossil) resources. Vehicles will be restricted to designated roads. Discharge of firearms is being restricted to ensure visitor safety. Many actions will be implemented to maintain and enhance the quality and quantity of the water, riparian vegetation, wildlife, cultural resources and paleontological resources. Administrative and visitor contact facilities are also planned.

The decisions of the *San Pedro River Riparian Management Plan* will apply to the 6,521 acres of the NCA not covered in the plan, with the following exceptions.

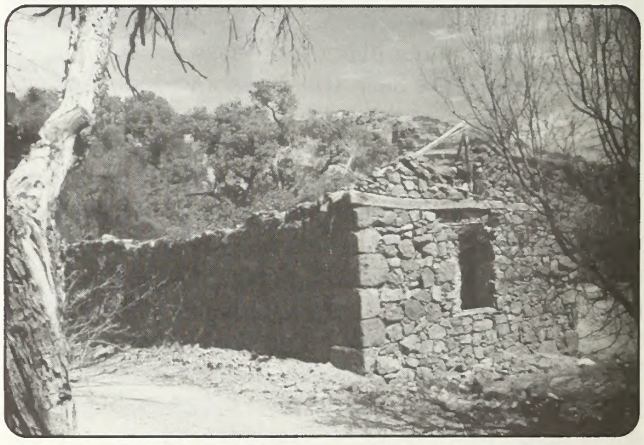
1. Livestock grazing will continue on the 6,521-acre area.

2. Change allotment categorization from "Maintain" to "Improve" to intensively manage livestock on all allotments in the 6,521-acre area.

3. Allotment management plans will be prepared for all allotments in the 6,521-acre area to provide for continued livestock grazing and protection of the riparian values of the NCA.

Management Concern 1 - Wildlife Habitat

Wildlife and their habitat are managed cooperatively by BLM and AGFD under a memorandum of understanding. Federally listed or proposed threatened and endangered (T&E) wildlife are protected under provisions of the *Endangered Species Act* (1973, as amended). It is Bureau policy (BLM Manual 6840) to: conserve T&E species and the ecosystems they depend upon; ensure that all actions authorized, funded or carried out by BLM are in compliance with the ESA; cooperate with the Fish and Wildlife Service and the National Marine Fisheries Service in planning and providing for the recovery of T&E species; and retain in public ownership all habitat essential to the survival or recovery of any T&E species, including habitat used historically by these species. It is also BLM policy to manage candidate species and their habitat to prevent listing them as threatened or endangered.



Remains of historic homesteads can be seen along lower Bonita Creek.

Management Concern 2 - Lands and Realty

Land Ownership Adjustment - Lands identified for disposal by sale must comply with Section 203 of the *Federal Land Policy and Management Act of 1976* (FLPMA). Section 203 states that lands offered for sale must meet one of the following criteria: they are difficult and uneconomic to manage and not suitable for management by another agency; they are no longer needed for the original purpose for which they were acquired; or they will serve an important public purpose. If lands, because of their location or other characteristics, meet one of the above criteria, they may be offered for sale.

All lands will be disposed of at fair market value, except for lands disposed of under the *Recreation and Public Purpose Act* (R&PP). Disposals are subject to valid existing rights.

It is Bureau policy not to dispose of public lands encumbered with properly recorded unpatented mining claims. Lands, however, may be disposed of if the mining claims are found to be void, a mining claimant relinquishes the mining claims to the United States, a mining claim is contested and found to be invalid or policy is changed.

Lands identified for disposal will be reviewed for the presence of significant cultural resources, threatened and endangered plants and animals, floodplain or flood hazards and prime and unique farmland. The actual transfer of the land cannot be finalized until these reviews are complete.

BLM will acquire lands and interests in lands needed to manage, protect, develop, maintain and use resources on public lands. Land will also be acquired to provide access for public use and enjoyment.

Repositioning public lands is often done under the exchange authority of Section 206 of FLPMA. Exchanges are negotiated with the State, as well as private landowners. Exchange is the preferred method of land disposal, as it provides an opportunity to acquire desired tracts of nonpublic land.

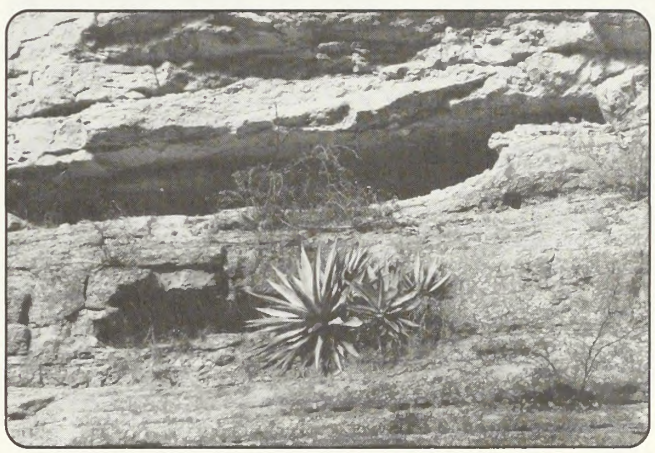
Land Use Authorizations - Rights-of-way, leases and permits will be considered on a case-by-case basis, in accordance with the decisions of this RMP. Major rights-of-way, however, will be directed to designated corridors where possible.

Communication Sites - Communication site grants will be issued for designated communication sites. Where designated sites do not meet public needs, new sites will be considered on a case-by-case basis.

Recreation and Public Purpose Leases/Patents - R&PP applications for public parks, building sites and other public purposes will continue to be evaluated on a case-by-case basis. Leases and patents will be issued in accordance with the decisions of this RMP and evaluated following the requirements of NEPA. New landfills will be authorized under the R&PP Amendment Act. Land exchanges will not be executed for later conveyance of land under the R&PP Act.

Public Land Withdrawals and Classifications - BLM will continue its withdrawal review process to determine the need for existing withdrawals and classifications. Future needs for withdrawals will be evaluated on a case-by-case basis, in accordance with the decisions of this plan.

Hazardous Materials (HAZMAT) - The laws that provide guidance for management of hazardous materials include the *Resource Conservation and Recovery Act of 1976* (RCRA), *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) and *Superfund Amendment Reauthorization Act* (Executive Order 12580, 1986). BLM responsibilities under these acts include conformance with State RCRA enforcement regulations pertaining to the storage, handling and disposal of hazardous materials and reporting unpermitted HAZMAT discharges under the provisions of CERCLA. The District's hazardous materials emergency contingency plan provides procedures for responding to hazardous materials incidents on public lands. Inventories of the public lands will be used to identify areas possibly contaminated with hazardous materials. Identified sites will be further evaluated by Preliminary Assessments, Site Investigations and Expanded Site Investigations, as appropriate.



Agaves cling to the cliffs along Turkey Creek, a popular picnicking spot just outside Aravaipa Canyon Wilderness.

Management Concern 3 - Outdoor Recreation and Visual Resource Management

The Bureau's primary recreation management goal is to ensure the continued availability of outdoor recreation opportunities that the public seeks and that are not readily available from other public and private entities. BLM's primary recreation role is to provide dispersed and resource-dependent types of outdoor recreation, and to deal with the few situations where special or more intensive types of recreation management are required.

Section 102 of FLPMA states that "... the public lands be managed in a manner that will protect the quality of the ... scenic ... values ...". Bureau policy (BLM Manual 8400) states that BLM "... has a basic stewardship responsibility to identify and protect visual values on public lands". Every action BLM authorizes, funds or carries out will be evaluated for its effects on the scenic qualities of the public lands. Adverse impacts will be mitigated.

Many unusual rock formations can be seen at Black Rock RNA ACEC.

Management Concern 4 - Energy and Minerals

It is the Bureau's policy to foster and encourage the development of energy and mineral resources. Overall guidance on management of energy and mineral resources comes from the *Mining and Minerals Policy Act*, Section 102 of FLPMA, *National Materials and Minerals Policy, Research and Development Act* and BLM's Mineral Resources Policy.

Locatable Minerals - Development of locatable minerals (copper, gold, silver, etc.) is provided for under BLM regulations (43 CFR 3802 and 43 CFR 3809). The 3809 regulations provide for mineral entry, exploration, location and operations, pursuant to the mining laws, that will prevent unnecessary and undue degradation of other resources. The 3802 regulations were implemented to provide for mining in lands under wilderness review in a manner that protects claimants' rights and values of wilderness study areas. Mining activities will be evaluated on a case-by-case basis during the life of this plan.

Salable Minerals - Sales of mineral materials (sand, gravel, etc.) to the public will be administered on a case-by-case basis. Mineral materials are usually sold at fair market value but free use permits may be made available to local and State government.

Leasable Minerals - BLM regulations (43 CFR 3100 - 3500) provide the authority to issue mineral (oil, gas, geothermal, etc.) leases. Stipulations are attached to leases to protect the natural and cultural resources in a lease area.

Management Concern 5 - Cultural Resources

The *Federal Land Policy and Management Act* is the primary basis for BLM's management of cultural resources. Many other laws and regulations, however, provide specific protection, the most important being the *National Historic Preservation Act* (NHPA) and the *Archaeological Resources Protection Act* (ARPA). Under NHPA activities that may affect existing and eligible National Register sites are evaluated and impacts are mitigated in consultation with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. NHPA also gives BLM the responsibility to inventory the cultural resources on public land and to preserve significant resources. ARPA prohibits looting and vandalism of archaeological resources. Several laws provide for the consideration and protection of traditional lifeway values including those of Native Americans.

Regardless of the alternative selected, cultural resources will be managed under three broad objectives: Manage for Information Potential; Manage for Public Values; and Manage for Conservation. The degree to which BLM manages for each category may vary among the alternatives. See Appendix 13 for the definition of each objective. The primary difference among the alternatives is not in the management objectives but in whether the emphasis is on protecting values *(Alternative B)*, utilizing values *(Alternative C)* or balanced management *(Preferred Alternative)*.

BLM's cultural resource management program is designed as a comprehensive system for identifying, planning the appropriate use of and managing cultural resources on public lands and in areas of BLM responsibility. The following are the cultural resource management program objectives.

1. Respond in a legally and professionally adequate manner to: a) the various statutory authorities concerning historic preservation and cultural resource protection and b) the principles of multiple use.

2. Recognize the potential public and scientific uses of, and the values attributed to, cultural resources on the public lands and manage the cultural resources so that these uses and values are not diminished but rather are maintained and enhanced.

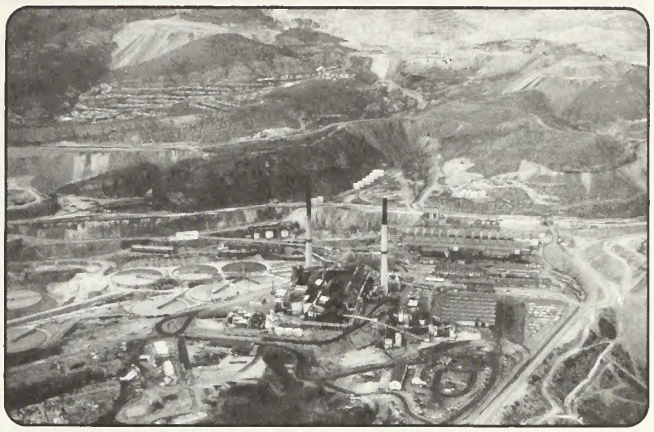
3. Contribute to land use planning and the multiple use management of the public lands in ways that make optimum use of the thousands of years of land use history inherent in cultural resource information, and that safeguard opportunities for attaining appropriate uses of cultural resources.

4. Protect and preserve, in-place, representative examples of the full array of cultural resources on public lands for the benefit of scientific and public use by present and future generations.

5. Ensure that proposed land uses, initiated or authorized by BLM, avoid inadvertent damage to federal and non-federal cultural resources.

Management Concern 6 - Soil Erosion

The *Federal Land Policy and Management Act* defines BLM's multiple use management mission to include protection of watersheds. In all alternatives in the RMP, the overall goal is to minimize soil erosion and rehabilitate eroded areas to maintain and enhance watershed condition. Corrective measures include construction of erosion control structures, allocation of proper levels of vegetation use by livestock and wildlife, land treatment measures and control or mitigation of activities that may contribute to soil erosion and degradation of watershed condition. Activities proposed in areas prone to erosion are evaluated through the NEPA process to determine anticipated impacts and mitigating measures needed to implement the project.



Copper mines and smelters, such as Phelps-Dodge in Morenci, provide jobs for many people in Graham and Greenlee Counties.

Management Concern 7 - Vegetation

BLM's authority for management of upland vegetation (vegetation outside riparian zones) comes from the *Endangered Species Act* (1973), *Taylor Grazing Act* (1934), *Public Rangelands Improvement Act* (1978) and *Federal Land Policy and Management Act* (1976). These laws require BLM to manage vegetation for its use while maintaining sufficient ground cover to maintain and enhance watershed condition.

Under the *Endangered Species Act*, BLM will avoid jeopardizing the continued existence of any listed or proposed species and to actively promote species conservation and recovery. BLM will also manage candidate species to prevent listing as threatened or endangered.

The 9th Circuit Court of Appeals has issued an injunction that prohibits use of chemicals for vegetation manipulation on public lands. BLM is preparing an environmental impact statement assessing the use of chemicals. Several actions in this RMP involve the use of herbicides. Herbicides will be used only if permitted upon completion of the *Environmental Impact Statement, Vegetation Treatment on BLM Lands in 13 Western States* (BLM 1989, in preparation) and relief from the 9th Circuit Court. If chemicals are approved for use, site specific environmental analyses will be prepared for each project proposing the use of chemicals.

The *Upper Gila-San Simon Grazing Environmental Impact Statement* (BLM 1978) and *Eastern Arizona Grazing Environmental Impact Statement* (BLM 1986) provide direction for management of livestock on

public lands. These EISs set the direction for livestock numbers, grazing systems, class of livestock, etc. The decisions of these EISs are still valid and will be incorporated by reference in all alternatives evaluated in this EIS.

The *Safford District Fire Management Activity Plan* (BLM 1989, in preparation) sets direction for management of wild and prescribed fire. Wildfires will be put out. Prescribed fire (either a natural start or a planned ignition) will be used to accomplish resource management objectives. Prescribed fire will be used only with a "pre-approved" burning plan.

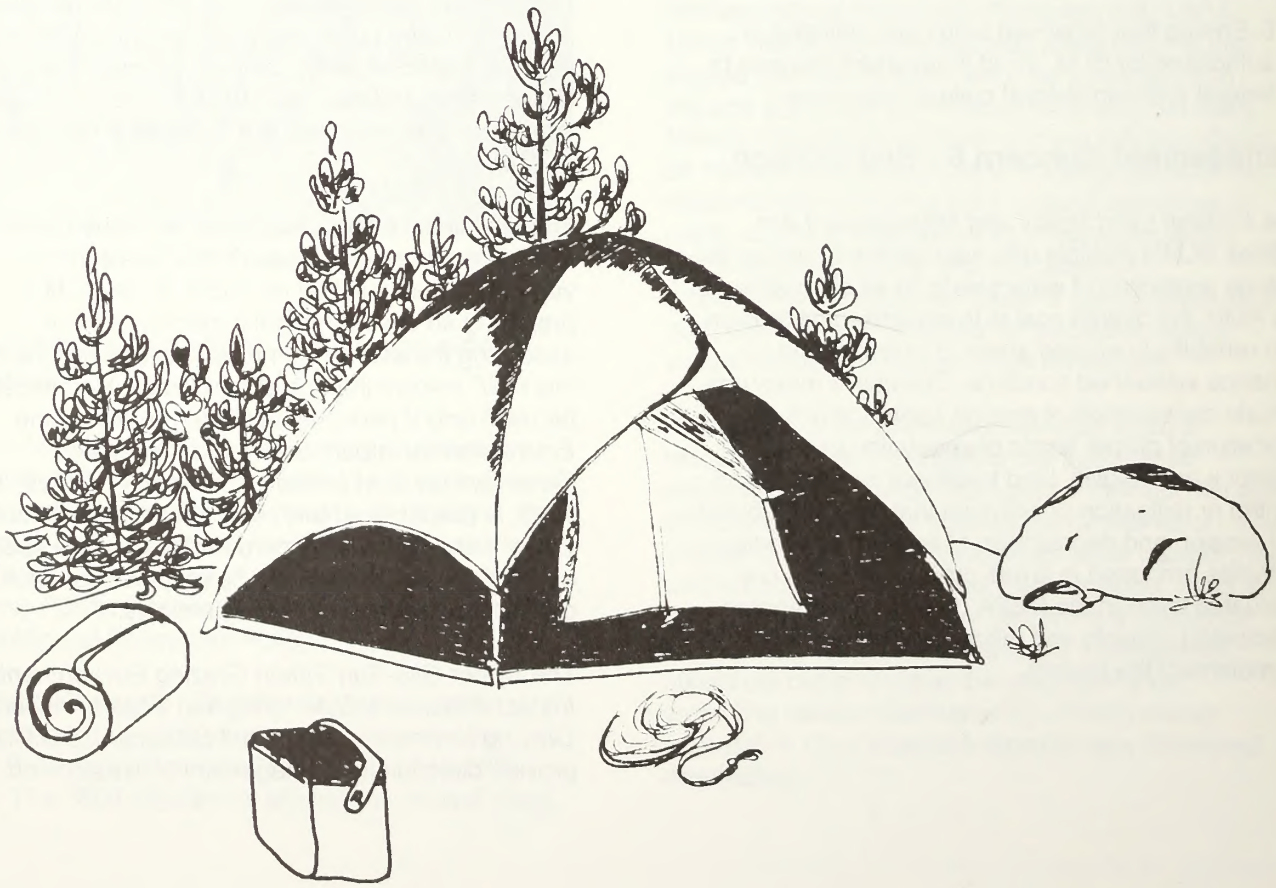
Management Concern 8 - Water Resources

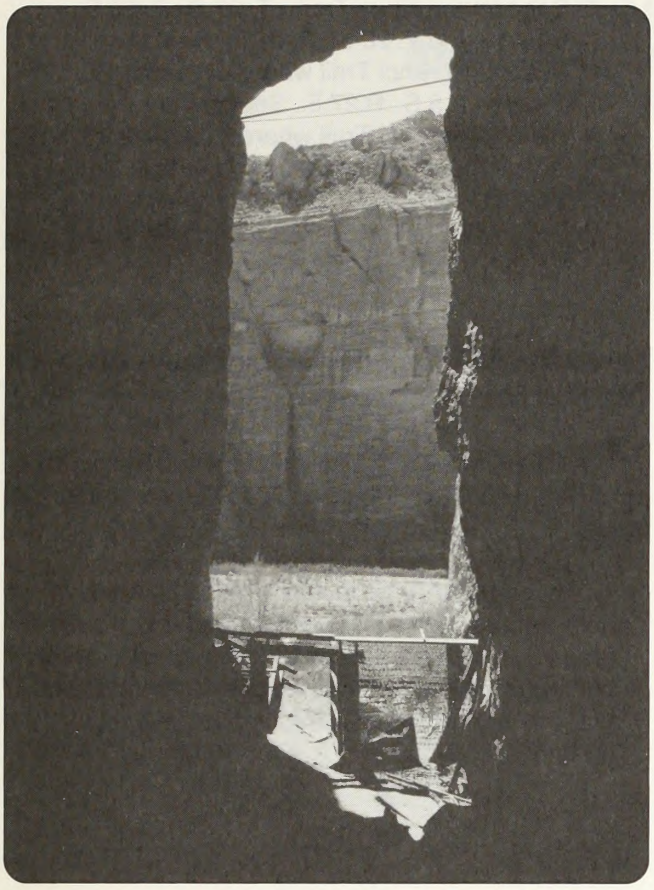
The *Water Quality Act* (1987) and *Arizona Environment Quality Act* (1986) provide direction on management and maintenance of water quality. Water is allocated in Arizona under the *Surface Water Code* (1919), the *Groundwater Code* (1980) and applicable federal laws. Executive Order 11988 gives BLM guidance on management of floodplains. Specifically, the Executive Order prohibits use of federal funds for construction in a floodplain. Acquisition of water rights for the quantities of water needed to accomplish BLM's programs will be obtained through the State of Arizona's appropriative procedure and adjudication process.

Water quality necessary to accomplish BLM's programs will be secured through water quality monitoring programs, NEPA evaluations of activities proposed on public lands and designation and management under the State of Arizona's Unique Waters Program.

Management Concern 9 - Air Quality

Under the *Clean Air Act* (1977, as amended), public lands were given Class II air quality classification. This classification allows for moderate deterioration of air quality associated with moderate, well-controlled population and industrial growth. Public lands will be managed as Class II areas unless excepted as non-attainment areas or their classification is changed as a result of State procedures prescribed under the *Clean Air Act*. Air quality reclassification is the responsibility of the State, not BLM. Impacts to air quality resulting from activities on public lands will be prevented or reduced to acceptable levels through mitigation prescribed in NEPA evaluations.





The large entrance to Eagle Creek bat cave, a maternity cave for Mexican free-tailed bats, was gated when the cave was used as a source of commercial guano.

Management Concern 10 - Paleontological Resources

The Bureau's authority for management and protection of fossils comes from a variety of laws, regulations and policies, most recently FLPMA. Section 102 requires that scientific values be protected while Section 103 requires scientific values be addressed in the management of public lands and resources. Potential impacts of activities on public lands will be evaluated through the NEPA review process to determine and mitigate adverse effects to significant fossil resources. Paleontological collection permits will be required for scientific studies.

Description of the Alternatives

This section provides details on each alternative considered in this RMP/EIS. Most of the actions identified in the RMP can be implemented when the State Director signs the Record of Decision. Other actions identified in the RMP require further approval before they can be implemented. Some decisions like withdrawals must be made by the Secretary of the Interior. Other decisions can only be made by Congress, including wilderness and wild and scenic river designations. With respect to Secretarial and Congressional actions, BLM is only making recommendations through this RMP. It is the intent of BLM, however, to pursue all recommendations made in this RMP.

Alternative A (The Preferred Alternative)

This alternative is BLM's preferred Resource Management Plan. It is designed to respond to the issues and management concerns in a manner that provides a balanced approach to multiple use management. It provides protection to important resources that cannot tolerate disturbance from other activities. It also provides for the consumptive use and development of other resources.

Issue 1 - Access

The following actions will be implemented to resolve the Access Issue.

1. Prepare a District Transportation Plan that includes identification of access needs and closures, a road and trail numbering system, sign needs, maintenance needs, coordination with other agencies and landowners, etc.

2. Minimize the impact of existing and proposed access routes on natural and cultural resources.

3. Reserve, as needed, access across public lands that are disposed of by sale, exchange or other means.

4. Obtain public and administrative access to the public lands.

5. Close roads, as needed, for visitor use management, resource protection and to accomplish resource management objectives.

6. Obtain legal access, for public and administrative use, across private lands in 37 locations Districtwide (see Appendix 1) and across other State and private lands as determined in the future.

7. Reconstruct the following roads to provide vehicle access for the administration and use of the public lands.

a. Virgus Canyon Road, about 1/2 mile - T. 6 S., R.18 E., Secs. 27, 34, 35.
b. Military Trail, about 3 miles - T. 3 S., R.16E., Secs. 13, 14, 23.
c. Buckeye Canyon Road, about 1 mile - T. 13 S., R.27 E., Secs. 26, 27, 34 and T. 14 S., R. 27 E., Sec. 9.
d. Left Fork of Markham Creek Road, about 3 miles- T. 3 S., R.24E., Sec. 36; T. 4 S., R. 24 E., Secs. 1, 12; and T. 4 S., R.25E., Secs. 6, 7, 18.
e. Jackson Cabin Road, about 5 1/2 miles - T.11S., R. 20 E., Secs. 22, 26, 27, 35, 36; T. 12 S., R. 20 E., Secs. 1, 2, 11, 24; and T. 12 S., R. 21 E., Secs. 30, 31.
f. East Turkey Creek Road, about 3/4 mile - T.7S., R. 19 E., Secs. 4, 5.
g. Other roads as determined in the future.

8. Obtain legal access, for public and administrative use, on existing foot and horse trails across private lands in the following locations.

a. Aravaipa Canyon Wilderness Trail from the west trailhead (at the administrative site) to the west boundary of the wilderness - T.6S., R. 17 E., Secs. 13, 24.
b. Babocomari River Trail - T. 20 S., R. 20 E., Sec. 13 and T. 20 S., R. 21 E., Sec. 18.
c. Safford-Morenci Trail where it crosses Bonita Creek - T. 5 S., R.27 E., Secs. 10, 11.
d. Safford-Morenci Trail where it crosses the San Carlos Indian Reservation - T. 4 S., R. 28 E., Sec. 31.
e. Hell Hole Canyon Trail and trailhead at Dry Camp - T. 6 S., R.19 E., Sec. 7.

Issue 2 - ACECs and Other Types of Special Management

The following actions will be implemented to resolve the ACEC and Other Types of Special Management Issue.

1. Designate 17 ACECs totalling 61,737 acres of public land to protect important natural and cultural resources. Table 2-1 describes the specific areas, acreages, values and management prescriptions. Maps 1-26 and 32 show the location of each proposed ACEC.

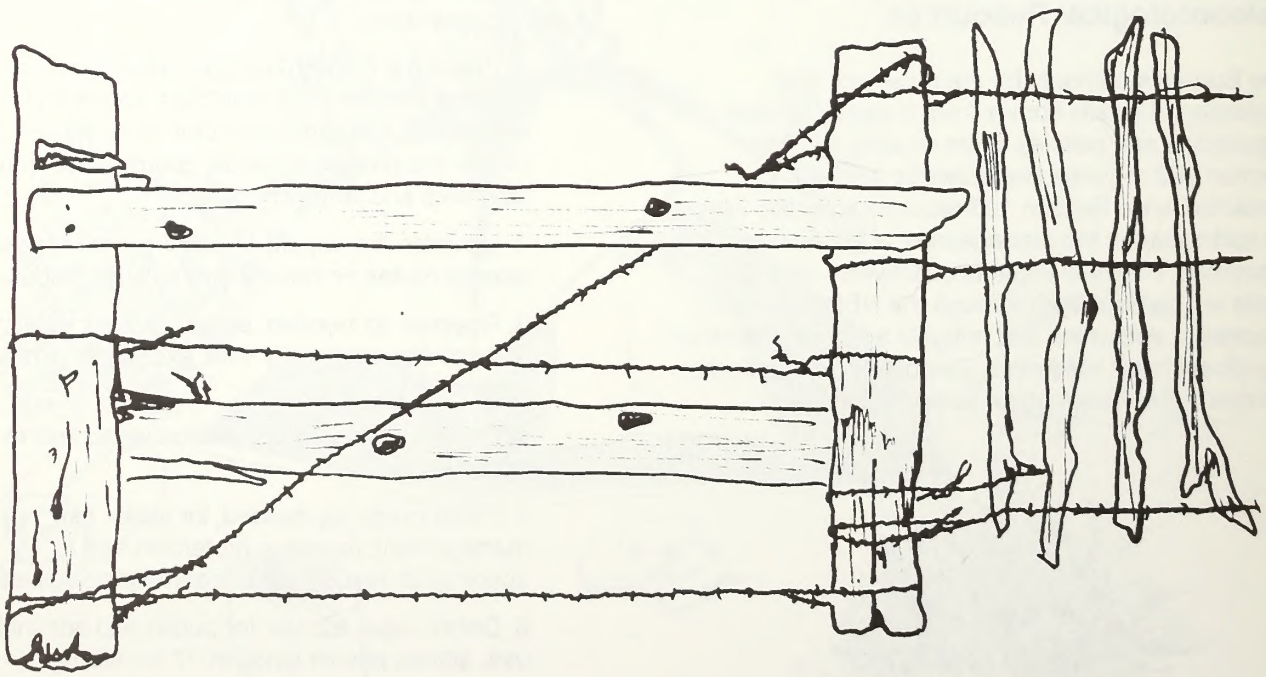


Table 2-1
Areas Designated as ACECs
Alternative A

Proposed Name	Federal, State & Private Acres		Values or Hazards	Management Prescription
Black Rock RNA ACEC	F S P	189 0 0 189	T&E species, unique plant association.	Restrict recreation use, no woodcutting, mineral withdrawal, NSO for mineral leasing, no sand/gravel sales.
Bonita Creek ACEC	F S P	1,572 0 1,193 2,765	City water, T&E species, riparian habitat, cultural resources, native fish, scenery.	Limit OHVs, NSO for mineral leasing, mineral withdrawal, no sand/gravel sales, restrict recreation development, monitor water quality, no woodcutting, rehabilitate riparian area, acquire private lands if available.
Gila Box ONA ACEC	F S P	12,784 0 695 13,479	Desert rivers, riparian habitat, T&E species, bighorn sheep, scenery, recreation use, cultural resources.	Mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, limit OHVs, no new R/Ws, no woodcutting, acquire private lands if available, VRM Class II.
Turkey Creek Riparian ACEC	F S P	2,326 0 0 2,326	Two riparian woodlands.	Limit OHV use, close Oak Grove Canyon to OHVs, require a mining plan, manage livestock, no woodcutting, monitor water quality, rehabilitate riparian area, develop cooperative agreements.
Table Mtn. RNA ACEC	F S P	1,220 0 0 1,220	Plant community.	Limit OHV use, no woodcutting, mineral withdrawal, no vegetative sales, prescribed fire plan.
Desert Grasslands RNA ACEC	F S P	530 240 70 840	Relict desert grasslands.	Mineral withdrawal (part of ACEC), closed to OHVs, acquire State/private lands if available, prescribed fire plan.
Dry Spring RNA ACEC	F S P	825 0 0 825	Five riparian areas.	Mineral withdrawal, packstock on trails only, no woodcutting, prescribed fire plan, no livestock.

Table 2-1 (cont.)
Areas Designated as ACECs
Alternative A

Proposed Name	Federal, State & Private	Acres	Values or Hazards	Management Prescription
Swamp Springs-Hot Springs Watershed ACEC*	F S P	17,438 967 4,478 22,883	Riparian areas, T&E species, bighorn sheep, native fish, cultural resources.	Limit OHV use, close Hot Springs Canyon to OHV use, require mining plans, no woodcutting, rehabilitate upland and riparian vegetation, no livestock, acquire legal access, acquire State/private lands if available.
Bear Springs Badlands ACEC	F S P	2,927 320 0 3,247	Paleontological (fossil) resources, scenery.	Scientific studies, VRM Class II, no road construction, inventory, limit OHV use, mitigate livestock and soil erosion impacts, mineral withdrawal, NSO for mineral leasing, no sand/gravel sales.
Guadalupe Cyn. ONA ACEC	F S P	989 0 778 1,767	Riparian habitat, T&E species, scenery, recreation values.	Mineral withdrawal in riparian zone, NSO for mineral leasing, no sand/gravel sales, limit OHV use, prescribed fire plan, no woodcutting, VRM Class II, no R/Ws.
Bowie Mtn. Scenic ACEC	F S P	4,190 0 100 4,290	Scenic backdrop to Ft. Bowie National Historic Site.	Mineral withdrawal in Ft. Bowie viewshed, NSO for mineral leasing, no sand/gravel sales, limit OHV use, suppress wildfire, no woodcutting, VRM Class I, no R/Ws, acquire private lands if available.
Coronado Mtn. RNA ACEC	F S P	120 0 0 120	Unique plant association.	Require mining plan, no woodcutting, VRM Class II, prescribed fire plan, no R/Ws.
Dos Cabezas Peaks ACEC	F S P	25 0 0 25	Scenic, historic landmark.	Require mining plan, NSO for mineral leasing, no sand/gravel sales, limit OHV use, no woodcutting, prescribed fire plan, no R/Ws, VRM Class II.

Table 2-1 (cont.)
Areas Designated as ACECs
Alternative A

Proposed Name	Federal, State & Private	Acres	Values or Hazards	Management Prescription
Eagle Creek Bat Cave ACEC	F S P	40 0 10 50	Mexican free-tailed bat maternity cave.	Mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, no guano extraction, monitor the cave, acquire private lands if available, VRM Class II.
Willcox Playa NNL ACEC	F S P	2,475 803 400 3,678	Pleistocene Epoch lakebed.	Mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, close to OHV use, acquire State/private lands if available, no woodcutting, no R/Ws, VRM Class II.
111 Ranch RNA ACEC	F S P	2,688 0 0 2,688	Paleontological (fossil) resources.	Mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, limit OHV use, no woodcutting, no R/Ws, VRM Class II, inventory.
Peloncillo Mtns. ONA ACEC	F S P	11,399 0 1,129 12,528	Cultural resources, scenery, bighorn sheep.	Require mining plan, limit OHV use, rehabilitate oak woodlands, acquire private land if available, no woodcutting, no R/Ws, prescribed fire plan, VRM Class II.

* Includes Muleshoe Riparian ACEC from Alternative C.
Source: Safford District Files

Appendix 2 includes a detailed discussion of each ACEC nomination, including a determination of relevance and importance, rationale for designation, management prescriptions and alternatives considered.

Black Rock RNA ACEC, Dry Spring RNA ACEC and part of Swamp Springs-Hot Springs Watershed ACEC (east of Jackson Cabin Road) are located in areas recommended for wilderness designation. If these areas are designated wilderness by Congress, the ACEC designation will be officially dropped since wilderness management will accomplish the same goals as the ACEC management prescription. The ACEC management prescription will be incorporated into the wilderness management plan.

2. Recommend the following areas to Congress as suitable for inclusion in the National Wilderness Preservation System.

a. Aravaipa Canyon Wilderness Additions - recommend about 6,684 acres suitable for

wilderness designation. These lands include the upper reaches of the major side canyons - Painted Cave, Horse Camp, Booger, Hell Hole, Parsons, Wire Corral and Virgus (see Map 27).

b. Galiuro Wilderness Additions - recommend about 2,685 acres suitable for wilderness designation. This area includes the lands east of Jackson Cabin road along the Galiuro Escarpment. They are lands identical to those already designated wilderness on the National Forest. They also include 640 acres previously found suitable for wilderness designation through the *Environmental Impact Statement for the Coronado National Forest Plan* (see Map 28).

Wilderness suitability reports are in Appendix 4.

3. Designate the areas recommended for wilderness as Wilderness Study Areas (WSA). Existing WSAs and new WSAs designated in this plan will be managed in accordance with the *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (BLM 1987) until designated wilderness by Congress or released for other uses (see Map 33).

4. Recommend the following river segment to Congress as suitable for inclusion in the National Wild and Scenic River System.

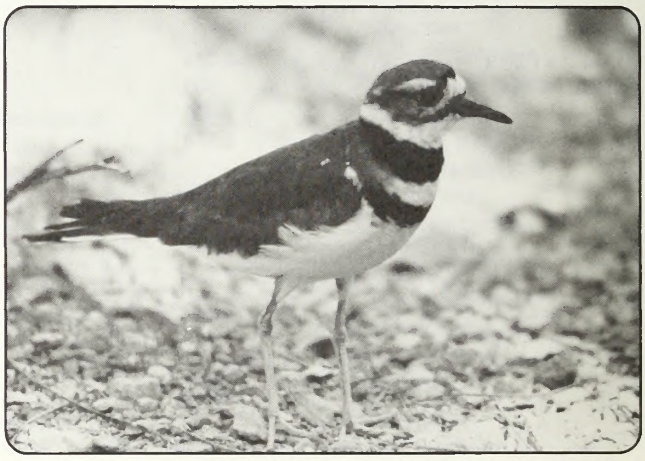
Gila River, from a point about 2 miles above Dripping Spring Wash to Winkelman. This segment is recommended as a Recreational River and is 10.2 miles long, including 1.4 miles through State land and 2 miles through private land. The segment is about 1/4 mile wide on each side of the river and follows legal subdivisions (see Map 29).

A wild and scenic river suitability report is in Appendix 5.

5. Develop Coordinated Resource Management Plans to direct the management of BLM's multiple use programs on public lands in the Aravaipa Creek Watershed, Muleshoe Ranch, Bear Springs Flat and Bonita Creek Watershed. The purpose of the plans is to establish management objectives that directs the development of future program activities toward maintenance and enhancement of watershed condition (see Maps 32 and 34). When developing Coordinated Resource Management Plans, livestock forage use will not be permitted to exceed an average of 40 percent over a full grazing cycle (averaging 3-5 years in duration).

6. Revise the San Simon River Coordinated Resource Management Plan. The purpose of this plan is to direct development of program activities to maintain and enhance watershed condition.

7. Cooperative livestock and watershed management studies will be conducted with the Forest Service, The Nature Conservancy and universities to restore native grasslands and improve the condition of the Aravaipa Watershed. Studies will investigate various "Best Management" techniques.



Killdeer are a common site around stock ponds throughout the Safford District.

Issue 3 - Off-highway Vehicles

The following actions will be implemented to resolve the Off-highway Vehicles Issue.

1. Initiate procedures to designate 1,708 acres at Hot Well Dunes "Open" to off-highway vehicle use. An "Open" area is an area where all types of vehicle use is permitted, at all times and anywhere in the area.

2. Designate the following areas "Closed" to off-highway vehicle use.

a. Oak Grove Canyon, in the Turkey Creek Riparian ACEC, above the Oak Grove Canyon corral - 82 acres.
b. Desert Grasslands RNA ACEC - 530 acres.
c. Willcox Playa NNL ACEC - 2,475 acres.
d. The riparian area of Hot Springs Canyon - 140 acres.
e. Any areas designated wilderness.

A "Closed" area is an area where off-highway vehicle use is prohibited, even if roads or trails exist within the "Closed" area.

3. Designate bighorn sheep lambing areas (90 acres) "Limited" to off-highway vehicle use. Lambing areas will be closed to OHV use from February 1 to April 30. For the remainder of the year (May 1 to January 31) OHVs will be limited to existing roads and trails in lambing areas.

4. Designate the remainder of the District (1,388,276 acres) "Limited" to off-highway vehicle use. Off-highway vehicle use will be limited to existing roads and trails occurring at the time of designation and any new roads approved for construction during the life of this RMP. Existing roads and trails have been identified and are available for review in the District Office. Table 2-2 identifies the acres designated in each category.

5. Off-highway vehicle designations and managment will apply to mountain bikes and any other form of mechanized transportation, motorized or nonmotorized.

Table 2-2
Acres Designated for Off-highway Vehicle Use
Alternative A

Off-highway Vehicle Designation	Approximate Acres
Open	1,708
Limited	1,388,366
Closed	9,926

Source: Safford District Files

Issue 4 - Riparian Areas

The following objective and actions will be implemented to resolve the Riparian Areas Issue.

The objective for management of riparian areas is to maintain or improve 75 percent of the acres of riparian vegetation in the District in good or excellent condition by 1997 (see Map 34).

To accomplish this objective, the following actions will be implemented.

1. Incorporate riparian area objectives into existing and future activity plans.

2. Develop and implement a system to prioritize needed riparian area management. The priorities will be based on management objectives, resource condition, resource conflict and the potential or capability of a riparian area to respond to treatment.

3. Develop a riparian inventory system. Coordinate development and implementation of the system with other land managing agencies.

4. Complete the inventory of all riparian areas in the District to establish baseline condition.

5. Establish a monitoring plan for selected riparian areas based upon the management priority system. Implement the plan and evaluate monitoring data. Continue to carry out needed changes in riparian area management through activity plans.

6. Continue to file for instream flow water rights on perennial streams or rivers and water rights on springs and ponds to protect and maintain riparian vegetation.

7. Continue to develop grazing systems and modify existing allotment management plans, as necessary, to manage livestock use for the improvement of riparian areas.

8. Do not permit firewood cutting in riparian areas.

9. Permit the removal of non-native vegetation for improvement of riparian vegetation.

10. Maintain and monitor representative relict riparian areas to provide a baseline for future management decisions.

11. Build Timber Draw Dam on the San Simon River to reestablish stream channel and floodplain conditions to promote the redevelopment of the riparian ecosystem.

12. Continue to manage the San Pedro Riparian National Conservation Area following the guidance in the existing management plan.

Management Concern 1 - Wildlife Habitat

The following objectives and actions will be implemented to resolve the Wildlife Habitat Management Concern.

- Maintain and enhance priority species and their habitats.
- Focus management actions on a single species, only when required by the Endangered Species Act. Actively promote T&E species recovery to achieve eventual delisting.
- Conserve candidate species to ensure that BLM authorized actions do not contribute to the need to list any species as threatened or endangered.
- Manage State listed species to meet State objectives. Other special status species will be managed in accordance with inter- and intra-agency management plans.
- Manage priority wildlife species habitat (vegetation communities), or special features of that habitat (water, riparian vegetation, cliffs, etc.) to maintain or enhance population levels.
- Focus management efforts on enhancing biological diversity.

The following actions will be implemented to accomplish these objectives.

1. Establish the following as priority species and habitats. Priority species and habitats in the District include federally listed, proposed and candidate T&E species and their habitat; State listed T&E species and their habitat; important game species and their habitat; and other sensitive species and their habitat.

   a. Riparian/aquatic habitat and species dependent on riparian/aquatic habitat - Gila topminnow, desert pupfish, southern bald eagle, loach minnow, spikedace, Gila chub, Colorado roundtail chub, razorback sucker, western yellow-billed cuckoo, gray hawk, Mississippi kite, common black hawk, ferruginous pygmy-owl, willow flycatcher, leopard frog, black bear, turkey and waterfowl.
   b. Species identified for reintroduction in Fish and Wildlife Service plans - aplomado falcon and woundfin.
   c. Desert tortoise.
   d. Desert and Rocky Mountain bighorn sheep.
   e. Mule deer.
   f. Pronghorn antelope.
   g. Oak woodlands and species dependent on oak woodland habitat white-tailed deer, turkey, black bear and Montezuma quail.
   h. Other species and habitats of interest - peregrine falcon, red bat, Sanborn's long-nosed bat, Mexican long-tongued bat, ferruginous and Swainson's hawks, javelina, mountain lion, dove, quail and bat roosts.

General management objectives for each of the priority species and habitats are in Appendix 6.

The tree-lined canyon along Aravaipa Creek provides cool shade for hikers and pleasant areas for primitive camping.

2. Inventory the District to determine the presence and abundance of priority species and their habitat.

3. Manage habitat for optimum wildlife populations, based on ecological conditions, taking into consideration climatic changes and the goals and objectives of the AGFD and the Fish and Wildlife Service (for T&E species).

4. Transplant and augment populations of priority wildlife species, if necessary, (see No. 1 above) to reach management objectives.

5. Monitor priority habitat to determine condition and changes in condition. Conduct inventories to determine the impacts of other activities on wildlife populations and habitat prior to preparation of habitat management plans (HMP). Identify opportunities in HMPs to mitigate adverse impacts and implement the actions needed to correct the problems.

6. Continue to maintain and improve wildlife habitat, with emphasis on priority habitat.

7. Protect springs and associated riparian vegetation for wildlife water, cover and forage.

8. Develop prescribed burning plans in fire dependent vegetation communities to improve habitat conditions for priority wildlife species.

9. Suppress wildfire in sensitive vegetation communities (like palo verde/saguaro) to reduce the detrimental effects on priority wildlife dependent on those communities.

10. Existing HMPs address all public lands in the District except scattered parcels in Cochise County. Two HMPs were completed prior to substantial land exchanges, and were not based on realistic ecological boundaries. To improve site-specific habitat management direction, redefine all HMP area boundaries. Develop Sikes Act HMPs with AGFD for the following areas; Geronimo, Gila Box, Aravaipa-Muleshoe, Peloncillo, Dos Cabezas, San Simon, Cochise and San Pedro. Priorities for revisions will be determined in coordination with AGFD.

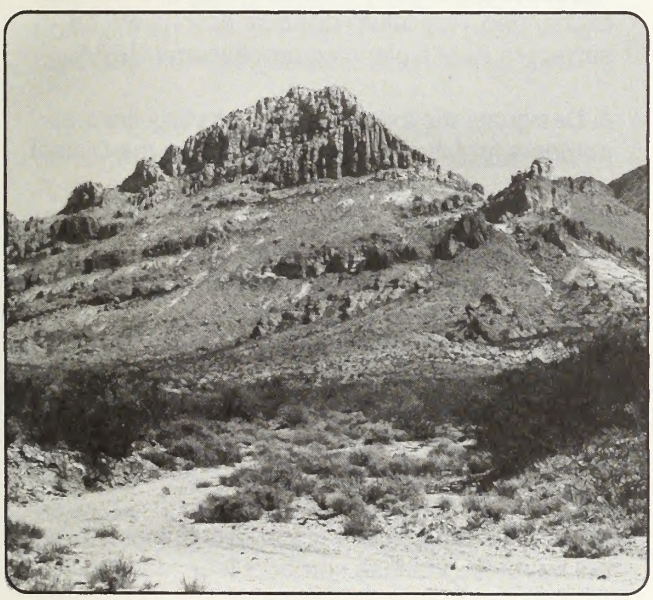
11. Provide input into livestock allotment management plans (AMPs) to ensure sufficient vegetation is available in bighorn sheep lambing areas for food and cover.

12. Provide input into AMPs in oak woodland habitat to ensure perennial grasses are available to provide adequate cover for priority species.

13. Close the following areas to animal damage control activities.

a. T&E species habitat for those techniques that pose a threat to the species.
b. Areas of concentrated recreation use for those techniques that pose a threat to the visitor.

Authorize areas that are open for animal damage control in coordination with the Animal and Plant Health Inspection Service (APHIS) on a yearly basis.



The rugged volcanic cliffs of Doubtful Canyon in the Peloncillos are home to desert bighorn sheep.

14. Inventory and categorize desert tortoise habitat by 1992. In the interim, place about 26,000 acres of public land in the San Pedro River basin from Cascabel to Winkelman and parts of the Dripping Spring and Pinal Mountains in Category 3. Place about 3,000 acres east of San Manuel in Category 2 (see Appendix 12 for goals and criteria for categorization of habitat).

15. Designate the following ACECs for the protection of priority wildlife species and their habitat; Black Rock RNA, Bonita Creek, Gila Box ONA, Swamp Springs/Hot Springs Watershed, Guadalupe Canyon ONA, Eagle Creek Bat Cave and Peloncillo Mountains ONA.

Management Concern 2 - Lands and Realty

The following objectives and actions will be implemented to resolve the Lands and Realty Management Concern.

1. The following are objectives for disposal of public lands.

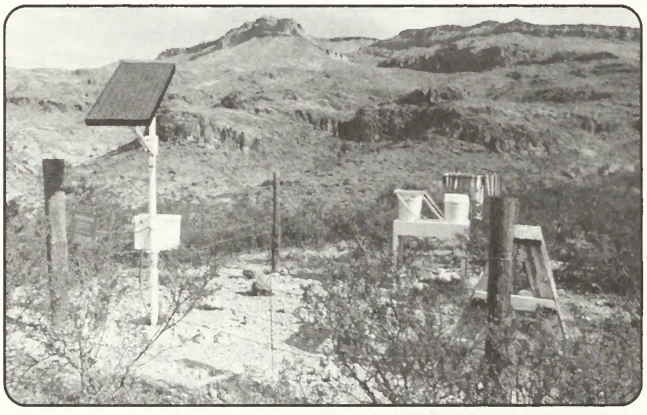
- The order of preference for disposal will be by exchange, *Recreation and Public Purposes* (R&PP) Act or sale.
- Isolated tracts of public land may be disposed of to improve resource management efficiency and service to the public.
- When lands are disposed of next to urban areas, the resulting boundaries will be manageable, fenceable and identifiable.
- Prior to disposal, lands will be evaluated for significant cultural, paleontological and natural resource values.

Dispose of 99,670 acres public lands in the following areas to accomplish these objectives.

a. Texas Canyon area.
b. Gila Valley area.
c. El Capitan and southern Pinal Mountain area.
d. Dripping Spring Wash area.
e. Swisshelm Mountain area.
f. Bisbee area, excluding the Juniper Flats block.
g. Tombstone area.
h. Douglas area.
i. York Valley area.
j. San Simon area.
k. Portal area.
l. R&PP sanitary landfill leases.

The areas identified above are locations where public lands have been identified as available for disposal. All public lands within these areas do not have to be sold or exchanged. Unforeseen future land management concerns or public demand may also necessitate the need for other public lands in retention areas to be sold or exchanged. The parcels considered at that time would be subject to BLM's planning process and the *National Environmental Policy Act*. BLM may identify resource values worthy of retention.

Appendix 7 shows the lands that meet the FLPMA criteria for sale. Although these lands qualify for sale, BLM's preferred order of disposal is exchange, *Recreation and Public Purposes Act* lease/patent or sale.



The Oliver Knoll atmospheric deposition monitoring station is part of a nationwide network that measures the acidity and particulate content of precipitation.

2. The objectives for land acquisition are.

- Acquire lands with high public values that compliment existing management programs.
- Consolidate ownership pattern to improve management efficiency.
- Improve service to the public.

To accomplish these objectives, acquire 108,562 acres of State of Arizona land in the following areas (see Map 35).

a. Spear Ranch.
b. Bryce Ranch.
c. scattered parcels in the Gila Mountains.
d. upper Turkey Creek.
e. Dripping Spring and Mescal Mountains.
f. upper San Francisco River.
g. west of Guadalupe Canyon.
h. Baker Canyon.
i. Juniper Flat (Mule Mountains)
j. Turtle Mountain/Eagle Creek.
k. Willcox Playa.
l. Babocomari River.
m. Redfield Canyon.
n. Muleshoe.
o. Ash Peak.
p. ACECs, when the management prescription identifies the need to acquire State lands within or adjacent to the ACEC.
q. other State lands that will accomplish BLM's acquisition objectives.

Further, acquire the following types of private land, generally within or adjacent to public lands, if they become available.

a. riparian habitat.
b. watersheds of important riparian areas.
c. high value wildlife habitat, such as T&E species areas and major migration corridors.
d. administrative sites.
e. land for developed recreation sites.
f. land providing access to public lands.
g. significant cultural and paleontological properties.
h. other lands with high public resource values such as inholdings in ACECs and other types of special management areas.
i. other private lands that will accomplish BLM's acquisition objectives.

3. Retain all lands, not identified for disposal, in public ownership to be managed under the principles of multiple use and sustained yield (see Map 35). Some lands identified for retention may be needed for future disposal. Unforeseen future land management concerns or public demand may necessitate the need for other lands to be sold or exchanged. Any future disposal actions will be subject to BLM's planning process and NEPA.

4. Designate the following existing utility lines as corridors for future utility needs across the District.

a. AEPCO line - 1 mile wide.
b. TEPCO line - 1 mile wide.
c. Public Service Company of New Mexico - 1 mile wide.
d. All American pipeline (San Simon Resource Area only) - 1 mile wide.
e. San Pedro - 1 mile wide (660 ft. wide where it crosses San Pedro Riparian NCA.
f. Hayden/Christmas - 1 mile wide.

All future major cross-District utility rights-of-way will be routed in these corridors (see Map 35).

5. Establish the Muleshoe Ranch as a right-of-way avoidance area. Every attempt will be made to avoid this area with major cross-District rights-of-way to minimize or eliminate conflicts with sensitive resource values.

6. Attach needed site-specific environmental protection stipulations to all rights-of-way.

7. Establish the following areas as right-of-way exclusion areas.

a. Gila Box ONA ACEC.
b. Guadalupe Canyon ONA ACEC.
c. Bowie Mountain Scenic ACEC.
d. Coronado Mountain RNA ACEC.
e. Dos Cabezas Peaks ACEC.
f. Willcox Playa NNL ACEC.
g. 111 Ranch RNA ACEC.
h. Peloncillo Mountains ONA ACEC.
i. wilderness study areas.
j. designated wilderness areas.

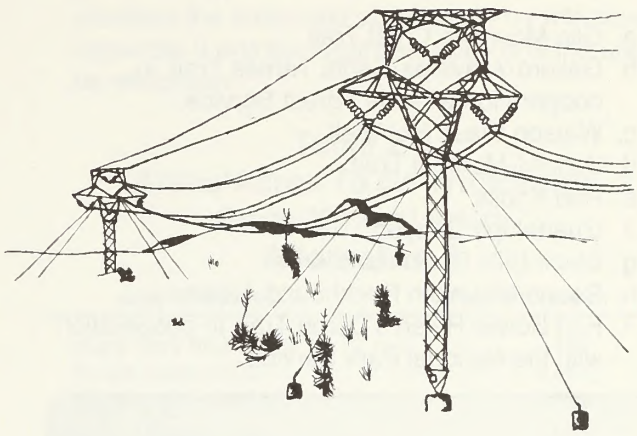
8. Designate Guthrie Peak, Juniper Flat in the Mule Mountains and the west end of Dos Cabezas Mountains as communication sites (see Map 35). Site plans will be prepared for all communication sites and designation of new sites will be analyzed on a case-by-case basis.

9. Complete the withdrawal review process. Revoke all withdrawals determined to no longer serve their original or intended purpose.

10. Withdraw 12 acres for the proposed Safford District Office administrative site (T. 7 S., R. 25 E., Sec. 24, that part of the W1/2NW1/4NE1/4 lying north of Golf Course Road) from the public land laws and the mining and mineral leasing laws.

11. Withdraw 10 acres for the Oliver Knoll atmospheric deposition monitoring station (T.4 S., R. 24 E., Sec. 22, SW1/4SE1/4SE1/4NE1/4, SE1/4SW1/4 SE1/4NE1/4, NW1/4NE1/4NE1/4SE1/4, NE1/4NW1/4NE1/4SE1/4) from the public land laws and the mining laws. Mineral leasing will be permitted with a "No Surface Occupancy" stipulation. Establish it as an administrative site.

12. Withdraw 29,104 acres, including administrative sites and campgrounds, from mineral entry to preserve important resource values. Table 2-4 identified the areas and acreages to be withdrawn. Appendix 9 lists the legal descriptions of the areas to be withdrawn.



Management Concern 3 - Outdoor Recreation and Visual Resource Management

The following actions will be implemented to resolve the Outdoor Recreation and Visual Resource Management Concern.

1. Designate the following areas as Special Recreation Management Areas (SRMAs) to manage current recreation use.

a. Aravaipa Canyon.
b. Bonita Creek.
c. lower Gila River from Dripping Spring Wash to Winkelman.
d. Gila Box.
e. Hot Well Dunes.
f. lands in the San Pedro Riparian NCA not included in the *San Pedro River Riparian Management Plan* (BLM 1989).

Prepare Recreation Area Management Plans (RAMPs) for designated SRMAs, as needed. Manage the remainder of the District as an Extensive Recreation Management Area for dispersed recreation use.

2. In the RAMPs, determine which public lands will be managed for interpretation and education and which sites will be signed for interpretation and education.

3. Continue to manage Aravaipa Canyon Wilderness following the guidance of the *Aravaipa Canyon Wilderness Management Plan* (BLM 1988).

4. Prepare project plans for the following areas that need some recreation planning and development.

a. Gila Mountain Crest Trail.
b. Galiuro/Aravaipa/Santa Teresa Trail, in cooperation with the Forest Service.
c. Watson Wash Hot Well.
d. Safford-Morenci Trail.
e. Red Knolls.
f. Guadalupe Canyon.
g. Black Hills Rockhound Area.
h. Round Mountain Rockhound Area.
i. Fort Bowie/Helen's Dome Trail, in cooperation with the National Park Service.

A BLM archaeologist examines fossilized bones at the Bear Springs Badlands ACEC.

5. Prohibit floatboating, for public safety, on the Gila River from Coolidge Dam to a point about 2 miles upstream from Dripping Spring Wash.

6. Evaluate new road construction for possibilities to enhance recreation experiences.

7. Continue the exclusion of livestock from 159 acres of public land around Fourmile Canyon Campground.

8. Unless otherwise established, the maximum length of stay for recreation purposes in any one location is 14 days.

9. Develop a District sign plan to determine which roads, sites and facilities will be signed for interpretation, education, information and public safety.

10. Designate the following as Visual Resource Management (VRM) Class I areas to preserve the scenic quality.

a. designated wilderness areas.
b. Bowie Mountain Scenic ACEC.

11. Designate the following as VRM Class II areas to preserve their scenic quality and to provide for limited modification of the landscape.

a. Black Rock RNA ACEC.
b. Bonita Creek ACEC.
c. Gila Box ONA ACEC and adjacent lands.
d. Turkey Creek Riparian ACEC.
e. Aravaipa Canyon tablelands.
f. Bear Springs Badlands ACEC.
g. Guadalupe Canyon ONA ACEC.
h. Dos Cabezas Peaks ACEC.
i. Eagle Creek Canyon.
j. Coronado Mountain
k. Willcox Playa NNL ACEC.
l. Peloncillo Mountains.
m. 111 Ranch RNA ACEC.
n. Muleshoe Ranch.
o. Babocomari River.
p. Gila River Canyon (below Coolidge Dam).
q. designated wild & scenic rivers.
r. wilderness study areas (interim).

12. Designate the following as VRM Class III areas to preserve their scenic quality while providing for management activities that are evident but do not dominate the landscape.

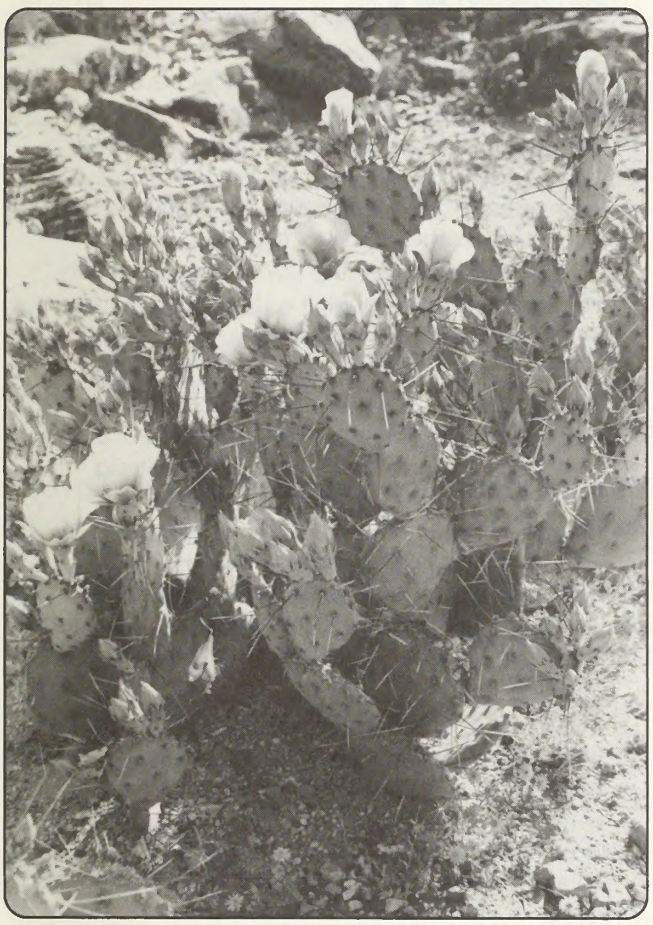
a. all major highway corridors.
b. public lands north of Morenci.
c. San Francisco River above and below the Town of Clifton.
d. Government Peak and Happy Camp Canyon area of the Dos Cabezas Mountains.
e. east of Bowie Mountain around the marble quarry.
f. lands adjacent to the San Pedro Riparian NCA.
g. Whitlock Mountains.
h. Orange Butte.
i. Gila River at Bonita Creek.
j. Gila Mountains.
k. Mescal Mountains.
l. Jackson Mountain.
m. Brandenburg Mountain.

13. Designate the remainder of the District as a VRM Class IV area. Appendix 8 explains the VRM management class objectives. The following table identifies the number of acres designated by VRM class.

Table 2-3
Acres by Visual Resource Management Class
Alternative A

VRM Class	Acres Designated
I	12,949
II	122,979
III	388,489
IV	875,583

Source: Safford District Files



Prickly pear cactus are a favorite food of javelina and other wildlife species.

Management Concern 4 - Energy and Minerals

The following actions will be implemented to resolve the Energy and Minerals Management Concern.

1. Mining notices and plans of operation received under the surface management regulations (43 CFR 3809) will be reviewed for impacts to other resources. Mitigation and reclamation measures will be provided to prevent unnecessary or undue degradation of the environment.

2. Withdraw 29,104 acres from mineral entry to preserve important resource values. Table 2-4 identifies the areas and acreages to be withdrawn. Appendix 9 lists the legal descriptions of the area to be withdrawn.

Table 2-4
Areas/Acres To Be Withdrawn From Mineral Entry
Alternative A

Area Withdrawn	Acres Withdrawn
Black Rock RNA ACEC	189
Bonita Creek ACEC	2,467
Gila Box ONA ACEC	12,874
Table Mountain RNA ACEC	1,220
Desert Grassland RNA ACEC	380
Dry Spring RNA ACEC	825
Bear Springs Badlands ACEC	2,927
Guadalupe Canyon ONA ACEC	378
Bowie Mountain Scenic ACEC	2,230
Eagle Creek Bat Cave ACEC	40
Willcox Playa NNL ACEC	2,475
111 Ranch RNA ACEC	2,688
Fourmile Canyon Campground	159
Oliver Knoll Atmospheric Deposition Monitoring Station	10
District Office Site - proposed	12
Yuma Wash Archaeological Site	120
Tres Alamos Archaeological Site	160
Midway Cave Archaeological Site	40
Total	29,104

Source: Safford District Files

3. Administrative sites and campgrounds will be withdrawn from entry under the mining laws (see Appendix 9 for legal descriptions).

4. Prohibit the sale of mineral materials (sand, gravel, etc.) on 33,512 acres to protect sensitive resource values. Table 2-5 identifies the areas and acreages where mineral materials will not be sold.

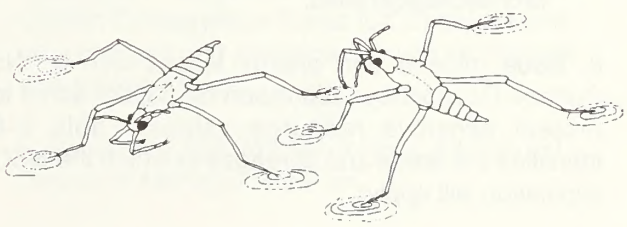


Table 2-5
Areas/Acres Where Mineral Materials Will Not Be Sold
Alternative A

Area	Acres
Black Rock RNA ACEC	189
Bonita Creek ACEC	2,467
Gila Box ONA ACEC	12,874
Bear Springs Badlands ACEC	2,927
Guadalupe Canyon ONA ACEC	989
Bowie Mountain Scenic ACEC	4,190
Dos Cabezas Peaks ACEC	25
Eagle Creek Bat Cave ACEC	40
Willcox Playa NNL ACEC	2,475
111 Ranch RNA ACEC	2,688
Riparian areas - other than those located in ACECs above	4,458
Tres Alamos Archaeological Site	160
Yuma Wash Archaeological Site	120
Total	33,512

Source: Safford District Files

5. Sale of mineral materials (sand, gravel, etc.) will not be permitted in areas with riparian vegetation (see Map 34).

6. The standard list of environmental protection stipulations will be attached to all mineral material sale authorizations. Any needed site-specific stipulations will also be added.

7. Energy and other leaseable minerals will be leased subject to the following conditions.

a. Standard environmental protection stipulations will be applied to all leases in open areas.
b. Surface occupancy will not be permitted in riparian areas (see Map 34).
c. Surface occupancy will not be permitted in campgrounds or administrative sites.
d. Surface occupancy will not be permitted in established bighorn sheep lambing areas from February 1 to April 30 of each year.
e. Surface occupancy will not be permitted at Tres Alamos, Yuma Wash or Midway Cave archaeological sites.

8. Issue mineral and energy leases with a "No Surface Occupancy" stipulation on 33,323 acres to protect sensitive resource values. Table 2-6 identifies the areas and acreages to which the NSO stipulation will apply.

Table 2-6
Areas/Acres to be Leased With a "No Surface Occupancy" Stipulation
Alternative A

NSO Area	NSO Acres
Black Rock RNA ACEC	189
Bonita Creek ACEC	2,467
Gila Box ONA ACEC	12,874
Bear Springs Badlands ACEC	2,927
Guadalupe Canyon ONA ACEC	989
Bowie Mountain Scenic ACEC	3,600
Dos Cabezas Peaks ACEC	25
Eagle Creek Bat Cave ACEC	40
Willcox Playa NNL ACEC	2,475
111 Ranch RNA ACEC	2,688
Riparian Areas - other than those located in ACECs above	4,458
Desert Bighorn Sheep Lambing Areas	90
Fourmile Canyon Campground	159
District Office Site - proposed	12
Oliver Knoll Atmospheric Deposition Monitoring Station	10
Yuma Wash Archaeological Site	120
Tres Alamos Archaeological Site	160
Midway Cave Archaeological Site	40
Total	33,323

Source: Safford District Files

Management Concern 5 - Cultural Resources

The following objectives and actions will be implemented to resolve the Cultural Resources Management Concern.

- Manage for Information Potential.
- Manage for Public Values.
- Manage for Conservation.

Table 2-7 identifies the actions that will be implemented to achieve each objective. Appendix 13 defines each objective.

The following actions will be implemented to accomplish the cultural resource management objectives. Critical protection will be considered more important than planning or threatened field studies involving non-critical protection. This does not mean, however, that all critical protection work will be done before any planning or other actions.

1. Prioritize implementation of planned cultural resource actions according to the degree of need as defined below.

a. First priority will be given to planned actions protecting threatened and significant cultural resources that would otherwise be lost. This includes obtaining important data from individuals (ethnographic information) that may not be available in the future.
b. Second priority will be given to the preparation of management plans directing how the District manages its cultural resources.
c. Third priority will be given in cases where there is good reason to believe that cultural resources are being adversely impacted even though they are not located in any area of proposed activity. Planned actions in these instances will seek to determine the nature and extent of the impacts and to identify corrective management actions. Third priority will also be given to planned actions protecting significant threatened cultural resources where the degree of damage or threat of damage is low (non-critical).
d. Fourth priority will be given to collecting cultural resource field data for planning purposes and for resource utilization not part of any protection or mitigation measure (for example, to allow a cultural property to be excavated solely for scientific research purposes or to allow a property to be interpreted to the public).
e. Fifth priority will be given to non-field studies designed to collect data for management or scientific purposes and for nominating cultural properties to the National Register of Historic Places (NRHP). These studies and nominations will not be designed primarily to meet immediate management needs. Instead, they will be done to provide supplemental management information or to highlight cultural properties by nominating them to the NRHP as requested by the general public or other interested parties.

Bobcats can be found in rocky, brushy habitat along desert washes throughout the Safford Distict.

2. Use the following administrative and physical measures to protect cultural properties:

a. **Signing** - place antiquity or interpretive signs on cultural properties being looted or vandalized.
b. **Withdrawal** - withdraw areas from locations under the mining laws to protect significant cultural properties. Retain significant cultural properties in public ownership to conserve them for the future.
c. **Access** - install fences or other barriers to restrict or eliminate public access to cultural properties that are being looted or vandalized. Prohibit firewood cutting for public use in areas with high cultural resource values.
d. **Patrol** - patrol threatened cultural properties with personnel from the Arizona Site Steward Program, BLM's Cultural Resource Assistants and Law Enforcement Rangers and community volunteers.
e. **Fire Control** - provide input to the development of a fire management plan to protect cultural resources. Assign a Cultural Resource Advisor to all extended attack fires whenever heavy equipment is used.
f. **Stabilization** - stabilize deteriorating standing architectural structures on significant cultural properties.
g. **Detailed Recording** - record all known prehistoric cliff dwellings and related structures in the District and the Yuma Wash and Midway Cave sites.
h. **Public Education** - develop and implement annual Public Affairs Action Plans for cultural resources.

3. Complete a Class III cultural resource inventory and intensive testing in and adjacent to the Timber Draw project area.

4. Eliminate livestock grazing on the Tres Alamos site.

5. Conduct ethnographic studies of Bonita Creek, Muleshoe Ranch, Pima Mormon Canal System, Civilian Conservation Corps (CCC) camps and project areas and Aravaipa Canyon Wilderness and adjacent lands.

6. Revise the Safford District Rock Art Cultural Resource Management Plan.

7. Conduct a records search inventory and personal interviews to determine the extent of looting and vandalism to cultural resources.

8. Conduct Class II archaeological inventories in Aravaipa Canyon Wilderness and adjacent lands, Muleshoe Ranch, Pima Mormon Canal System and CCC camps and project areas to enhance our knowledge of cultural resources for future management decisions.

9. Conduct a Class III archaeological inventory in Bonita Creek Canyon to enhance our knowledge of cultural resources for future management decisions.

10. Conduct a judgemental cultural resource field inventory and archival research to increase our knowledge of the Dos Cabezas historical mining area on public lands. Develop cooperative management agreements for the inventory of the mining area on adjacent non-federal lands.

11. Conduct archival research to identify historic trails, roads, telegraph lines and other forms of historic transportation and communication.

12. Develop a regional research design to help identify the specific scientific and public values of individual cultural properties.

13. Actively promote scientific investigations on District cultural resources through the development of information packets, brochures and other measures.

14. Promote the development of a rigorous predictive model for the occurrence of cultural resources.

15. Develop a comprehensive interpretive and educational program depicting the geological, cultural and wildlife values of Aravaipa Canyon.

16. Develop and implement a management plan for interpretive use of the Turkey Creek cliff dwelling, the CCC Base Camp near the Safford Airport and selected cultural properties along Bonita Creek.

17. Conduct a cooperative study with the Soils Program to determine the effects of soil erosion on cultural properties in the San Simon drainage.

Table 2-7
Management Objectives Achieved by Planned Actions
Alternative A

	Actions	Manage for Information Potential	Manage for Public Values	Manage for Conservation
1.	Use implementation priority criteria	N/A	N/A	N/A
2.	Use protection measures	X	X	X
3.	Inventory and test at Timber Draw	X		
4.	Eliminate grazing - Tres Alamos	X		
5.	Conduct ethnographic studies -			
	Bonita Creek	X	O	O
	Muleshoe Ranch	X	O	O
	Mormon Canals	X	O	O
	CCC camps and projects	X	O	O
	Aravaipa area	X	O	O
6.	Revise Rock Art CRMP	X	O	O
7.	Study vandalism	X		
8.	Conduct Class II inventories -			
	Aravaipa area	X	O	O
	Muleshoe Ranch	X	O	O
	Mormon Canals	X	O	O
	CCC camps and projects	X	O	O
9.	Conduct Class III inventory -			
	Bonita Creek	X	O	O
10.	Inventory and manage the Dos Cabezas mining area	X	O	O
11.	Research trails, roads, etc.	X	O	
12.	Develop regional research design	X		
13.	Promote scientific use	X		
14.	Promote development of predictive model	X		
15.	Interpret Aravaipa area	X		
16.	Interpret -			
	Turkey Creek Cliff Dwellings	X		
	Safford Airport CCC Camp	X		
	Bonita Creek properties	X		
17.	Study San Simon erosion	X		

X - Primary Objective O - Secondary Objective N/A - Not Applicable
Source: Safford District files.

Management Concern 6 - Soil Erosion

The following objectives and actions will be implemented to resolve the Soil Erosion Management Concern.

- Reduce accelerated erosion.
- Restore eroded floodplains of the San Simon River and in the Bear Springs Flat area (see Map 34).
- Reduce silt and salts entering the Gila River from the San Simon River.

The following actions will be implemented to accomplish the soil erosion and salinity management objectives.

1. Develop activity plans, where needed, to initiate rehabilitation of eroded areas.

2. Construct Timber Draw Dam to continue efforts to rehabilitate eroded areas of the San Simon River (see Map 34).

3. Continue reseeding grasses and riparian vegetation on restored areas behind erosion control structures. Manage livestock with fencing or other methods to protect these areas.

4. Protect the eroded floodplain of the San Simon River through appropriate livestock management.

5. Establish soil erosion studies at Hot Well Dunes to determine the effects of off-highway vehicle use. Limit OHV use if erosion becomes unacceptable.

6. Repair Oso Largo Detention Dam (see Map 34) in the Bear Springs Flat area to continue rehabilitation of eroded lands. Assess the land upstream of Oso Largo Dam to determine the need for maintenance of existing structures or the need for additional structures. Make all structures functional without adverse impacts to the ACEC located in the upper end of the eroded area.

7. Investigate methods to increase vegetation cover in the Bear Springs Flat area, without adverse impacts to the ACEC.

8. Continue seasonal livestock use in the Bear Springs Flat area.

9. Cap or contain the flow of flowing wells in the San Simon Watershed if salinity exceeds 3,000 ppm.

A unique plant community of Arizona cypress, Mexican pinyon, pointleaf and Pringle's manzanita and netleaf oak atop Coronado Mountain is managed by BLM and USFS.

Management Concern 7 - Vegetation

The following objectives and actions will be implemented to resolve the Vegetation Management Concern.

1. The objective for management of upland vegetation is to restore and maintain plant communities for wildlife, watershed condition and livestock. The desired plant communities will be determined in the preparation of activity plans (allotment management plans, habitat management plans, etc.). An ecological site inventory will be completed as new allotment management plans are prepared or existing plans revised.

2. The objective for management of threatened, endangered and special status plant species is to manage the public lands to preserve occurrences of special status species and to achieve the eventual delisting of threatened and endangered species.

To accomplish the T&E plant species management objectives, inventory and monitor T&E plants in the following priority order.

a. Listed threatened *Coryphantha robbinsorum* and *Vauquelinia pauciflora*.
b. Candidate category I species - *Aster lemonii* and *Rumex orthoneurus*.
c. Re-inventory and monitor other candidate species known to occur on public lands.
d. Re-inventory and monitor *Echinocereus triglochidiatus* - listed endangered species.

3. Land treatments (vegetation manipulation), will be used to decrease invading woody plants and increase grasses and forbs for wildlife, watershed condition and livestock. Public lands, where vegetation condition is less than desired to meet management objectives, will be identified for treatment through activity plans. Treatments may include various artificial (mechanical, chemical or prescribed fire) methods. Management objectives for riparian vegetation can be found under *Issue 4* - Riparian Vegetation.

The following actions will be implemented to accomplish the land treatment objective.

a. Implement those desirable methods to increase vegetation cover and decrease soil erosion.
b. Study the methods and effects of reducing rodent and rabbit populations on selected upland areas to improve vegetation cover.

4. Make the following firewood cutting areas available to the public (see Map 34).

a. San Simon Fan Structure area - for tamarisk and mesquite.
b. West of the San Simon River, on Sonoita soils - for mesquite.
c. Mesquite Well area, on Sonoita soils - for whitethorn and mesquite.
d. Horse Mountain area - for manzanita, juniper and mesquite. Permit up to 500 cords per year Districtwide, but do not allow cutting in major desert washes.

5. Determine other areas appropriate for firewood cutting and the quantities available.

6. Issue permits for vegetative products, other than firewood, as determined by public demand and on-site evaluation.

Management Concern 8 - Water Resources

The following objectives and actions will be implemented to resolve the Water Resources Management Concern. These objectives are designed to support on-going programs (range, riparian, recreation, wildlife, etc.) while providing data to be used for future management decisions.

1. The objective for management of groundwater is to conserve while using water for prudent resource management purposes.

The following actions will be implemented to accomplish the groundwater management objective.

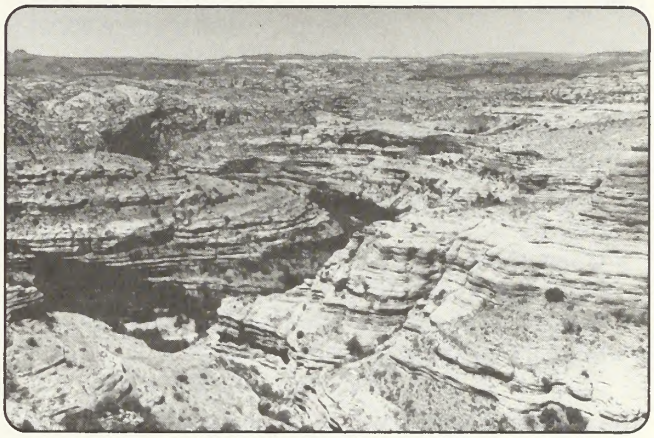
a. Cap unusable or unsuitable wells to prevent contamination of aquifers and to contain highly saline water.
b. Restrict artesian flow to meet specific program needs.
c. Inspect and maintain water systems to prevent unnecessary loss of water.

Further, initiate a groundwater study for the San Simon Watershed to determine the level of the various aquifers, changes in the level of the aquifers, the water quality of the aquifers and availability of groundwater for BLM's resource management programs. Prepare a management plan for use and conservation of water (quality and quantity).

2. The objective for management of water quality is to maintain or enhance water quality at, or above, established standards for designated uses to meet management goals for each water source. BLM will adhere to federal and State water quality laws and standards.

The following actions will be implemented to accomplish the water quality management objective.

a. Support other resource programs in the implementation of this plan and monitor the effectiveness of planning decisions.
b. Continue the existing water quality testing program in the District (see Appendix 11).
c. Initiate data collection where there is a suspected or known pollution threat or hazard to water quality.
d. Develop an activity plan and initiate management actions needed to mitigate water quality degradation detected through monitoring.
e. Develop a District Water Quality Monitoring Plan, including recommendations for Unique Waters nominations.
f. Share data with other water quality managing agencies.



The winding canyonlands of Aravaipa, as viewed from atop the Pilares, are habitat for desert bighorn sheep.

3. Evaluate Aravaipa Creek, Mescal Creek, Redfield Canyon, Swamp Springs Canyon, Hot Springs Canyon and Bass Canyon to determine their suitability for Unique Waters designation. Nominate those that meet the required standards.

4. Evaluate Turkey Creek, Deer Creek and Left Fork of Markham Creek (intermittent streams) for Unique Waters designation, if their flow becomes perennial. Nominate those that meet the required standards.

5. Manage stream segments designated as Unique Waters to maintain or enhance water quality standards and protect the associated resources.

6. Evaluate the long-term Districtwide resource management needs for ground and surface water.

7. Evaluate Gila River, San Francisco River, Redfield Canyon, Hot Springs Canyon, Swamp Springs Canyon, Bass Canyon, Bonita Creek and Mescal Creek to determine the quantities of instream flow (water right) needed to meet resource management objectives. File on the quantities needed to meet resource management objectives.

8. Evaluate Turkey Creek, Deer Creek, Left Fork of Markham Creek and Guadalupe Canyon (intermittent streams), if their flow becomes perennial, to determine the quantities of instream flow (water right) needed to meet resource

management objectives. File on the quantities needed to meet resource management objectives.

9. Purchase water rights, when necessary, to protect threatened resource values.

Management Concern 9 - Air Quality

The following objectives and actions will be implemented to resolve the Air Quality Management Concern.

- Continue to manage the airshed in accordance with State of Arizona Class II standards, unless re-designated. Class II standards allow for moderate deterioration of air quality associated with moderate, well-controlled industrial and population growth.
- Comply with all federal and State statutes pertaining to air quality and cooperate with the State of Arizona in carrying out the State Implementation Plan.

The following actions will be implemented to accomplish these objectives.

1. When implementing BLM or BLM-approved activities, minimize surface disturbances to prevent the addition of large quantities of dust to the air. When surface disturbances occur, require appropriate stipulations to mitigate the impact to air quality.

2. Continue the rehabilitation of erosion in the San Simon Watershed and the Bear Springs Flat area (see Map 34) to reduce airborne dust.

3. Conduct prescribed fire with prior approval of the Arizona Bureau of Air Quality Control.

4. Continue operation of the Oliver Knoll atmospheric deposition monitoring station as part of the nationwide network.

Management Concern 10 - Paleontological Resources

The following objectives and actions will be implemented to resolve the Paleontological Resources Management Concern.

- Preserve a representative sample of Class I paleontological localities.
- Ensure that BLM actions avoid inadvertent damage to paleontological resources.
- Manage paleontological resources to preserve their scientific and interpretive values.
- Give emphasis to management of Class I sites.
- Provide opportunities for education and interpretation.
- Provide opportunities for scientific research.

Implement the following actions to accomplish the objectives for management of paleontological resources:

1. Continue inventories in areas of proposed activities to identify the presence of paleontological resources and determine measures needed to mitigate anticipated impacts.

2. Conduct field studies at Bear Springs Badlands, 111 Ranch and Hot Well Dunes.

a. Provide data on the nature, extent and scientific significance of fossils.
b. Determine the condition of exposures and factors that may be affecting them.
c. Determine the suitability of these areas for inclusion in the National Natural Landmarks program. Nominate qualifying areas.

3. Prepare a Paleontological Resources Management Plan for the District.

4. Write a detailed overview of the biological and geological history of the District with emphasis on paleontological resources important to scientific research.

5. Study, evaluate and monitor off-highway vehicle use at the Hot Well Dunes to determine the effect on paleontological resources.

Alternative B

This alternative emphasizes management and protection of natural and cultural resources while still providing for use and development of the public lands. More restrictions are applied to protect natural and cultural resources. This alternative designates larger areas as ACECs with more protective management prescriptions. It also recommends larger areas to Congress as wilderness and wild and scenic rivers. Priority wildlife species include T&E species and their habitat but not game species. Actions are proposed to protect water quality and quantity and additional management emphasis is given to protection and enhancement of riparian areas. The protection of cultural resource values (scientific, public and conservation) will be emphasized before the use of these values.

Issue 1 - Access

The following actions will be implemented to resolve the Access Issue.

1. Prepare a District Transportation Plan that includes identification of access needs and closures, a road and trail numbering system, sign needs, maintenance needs, coordination with other agencies and landowners, etc.

2. Minimize the impact of existing and proposed access routes on natural and cultural resources.

3. Reserve, as needed, access across public lands that are disposed of by sale, exchange or other means.

4. Obtain public and administrative access to the public lands.

5. Roads may be closed, as needed, for visitor use management, resource protection and to accomplish resource management objectives.

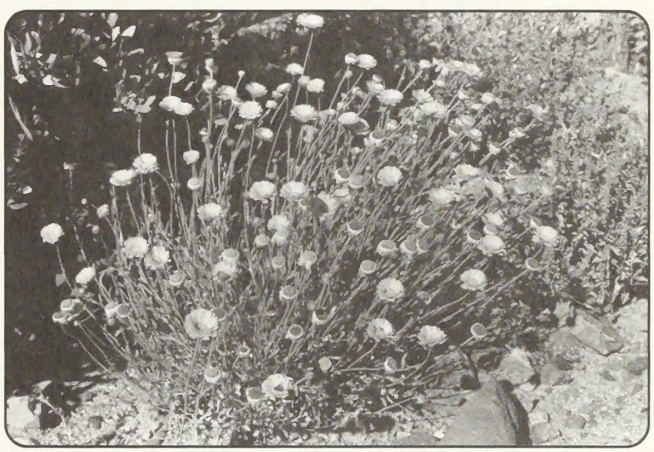
6. Obtain legal access, for public and administrative use, across private lands in 29 locations Districtwide (see Appendix 1) and across other State and private lands as determined in the future.

7. Reconstruct the following roads to provide vehicle access for the administration and use of the public lands.

a. Virgus Canyon Road, about 1/2 mile - T. 6 S., R.18 E., Secs.27, 34, 35.
b. Military Trail, about 3 miles - T. 3 S., R.16E., Secs. 13, 14,23.
c. Buckeye Canyon Road, about 1 mile - T. 13 S., R.27 E., Secs. 26, 27, 34 and T. 14 S., R. 27 E., Sec. 9.
d. Jackson Cabin Road, about 5 1/2 miles - T. 11 S., R. 20 E., Secs. 22, 26, 27, 35, 36; T. 12 S., R. 20 E., Secs.1, 2, 11, 24; and T. 12 S., R. 21 E., Secs. 30, 31.
e. other roads as determined in the future.

8. Obtain legal access, for public and administrative use, on existing foot and horse trails across private lands in the following locations.

a. Aravaipa Canyon Wilderness Trail from the west trailhead (at the administrative site) to the west boundary of the wilderness - T.6S., R. 17 E., Secs. 13, 24.
b. Babocomari River Trail - T. 20 S., R. 20 E., Sec. 13 and T.20S., R. 21 E., Sec. 18.
c. Safford-Morenci Trail where it crosses Bonita Creek - T. 5 S., R. 27 E., Secs. 10, 11.
d. Safford-Morenci Trail where it crosses the San Carlos Indian Reservation - T. 4 S., R. 28 E., Sec. 31.
e. Hell Hole Canyon Trail and trailhead at Dry Camp - T. 6 S., R.19 E., Sec. 7.



Desert baileya, a common desert flower, is poisonous to livestock.

Issue 2 - ACECs and Other Types of Special Management

The following actions will be implemented to resolve the ACECs and Other Types of Special Management Issues.

1. Designate 17 ACECs totalling 179,220 acres of public land to protect important natural and cultural resources. Table 2-8 describes the specific areas, acreages, values and management prescriptions. Maps 1-26 and 32 show the location of each proposed ACEC.

Table 2-8
Areas Designated as ACECs
Alternative B

Proposed Values or Name	Federal, State Management & Private	Acres	Hazards	Prescription
Black Rock RNA ACEC	F	309	T&E species, unique plant association.	Restrict recreation use, no woodcutting, mining and leasing withdrawal, exclude livestock, no sand/gravel sales, no wildlife habitat projects, VRM Class I.
	S	0		
	P	0		
		309		
Bonita Creek ACEC	F	30,240	City water, T&E species, riparian habitat, cultural resources, native fish, scenery.	Limit OHVs, NSO for mineral leasing in canyon, mining withdrawal in canyon, no sand/gravel sales in canyon, restrict recreation use, monitor water quality, rehabilitate riparian and upland vegetation, acquire private lands if available, no woodcutting, stabilize roads and stock ponds.
	S	0		
	P	2,599		
		32,839		
Gila Box ONA ACEC	F	14,034	Desert rivers, riparian habitat, T&E species, bighorn sheep, scenery, recreation use, cultural resources.	Mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, limit OHVs, no OHVs in canyon bottoms, suppress wildfire in riparian zones, acquire private lands if available, no R/Ws outside the designated corridor, no woodcutting, VRM Class II.
	S	0		
	P	695		
		14,729		
Aravaipa Watershed ACEC*	F	70,000	Valuable watershed, including a wilderness, riparian zones, T&E wildlife, bighorn sheep, native fish, perennial streams, recreation opportunities.	Limit OHV use, close Oak Grove Canyon to OHV use, NSO for mineral leasing in riparian zones and perennial waters, no sand/gravel sales, require a mining plan, no livestock after expiration of current lease, monitor water quality, rehabilitate riparian and upland vegetation, develop cooperative agreement.
	S	0		
	P	8,028		
		78,028		

Table 2-8 (cont.)
Areas Designated as ACECs
Alternative B

Proposed Values or Name	Federal, State Management & Private	Acres	Hazards	Prescription
Table Mtn. RNA ACEC	F	1,220	Plant community.	Limit OHV use, no woodcutting, mineral withdrawal, no vegetative sales, prescribed fire plan, NSO for mineral leasing, no sand/gravel sales, exclude livestock.
	S	0		
	P	0		
		1,220		
Desert Grasslands RNA ACEC	F	530	Relict desert grasslands.	Mining and mineral leasing withdrawal, no sand/gravel sales, closed to OHV use, acquire State/private lands if available, prescribed fire plan.
	S	240		
	P	70		
		840		
Dry Spring RNA ACEC	F	825	Five riparian areas.	Mining and mineral leasing withdrawal, no sand/gravel sales, closed to OHV use, no packstock off trails, no overnight camping, prescribed fire plan, no livestock.
	S	0		
	P	0		
		825		
Muleshoe ACEC**	F	26,000	Riparian areas, T&E species, bighorn sheep, native fish, cultural resources, valuable watershed.	Limit OHV use, close Hot Springs Canyon to OHVs, require mining plans, rehabilitate riparian and upland vegetation, exclude livestock except on Soza Mesa and peripheral areas, acquire legal access, acquire State/private land if available.
	S	967		
	P	6,320		
		33,287		
Bear Springs Badlands ACEC	F	4,127	Paleontological (fossil) resources, scenery.	Scientific studies, VRM Class II, no road construction, limit OHV use, mitigate livestock and soil erosion impacts, mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, extensive inventory.
	S	320		
	P	0		
		4,447		

Table 2-8 (cont.)
Areas Designated as ACECs
Alternative B

Proposed Values or Name	Federal, State Management & Private	Acres	Hazards	Prescription
Guadalupe Canyon ONA ACEC	F S P	5,838 0 1,146 6,984	Riparian habitat, T&E species, scenery, recreation values.	Mineral withdrawal in riparian zone, NSO for mineral leasing, no sand/gravel sales, limit OHV use, prescribed fire plan, no wood cutting, VRM Class II, no R/Ws.
Bowie Mtn. Scenic ACEC	F S P	4,190 0 100 4,290	Scenic backdrop to Ft. Bowie National Historic Site.	Mineral withdrawal in Ft. Bowie viewshed, NSO for mineral leasing, no sand/gravel sales, limit OHV use, suppress wildfire, no woodcutting, VRM Class I, no R/Ws, acquire private lands if available.
Coronado Mtn. RNA ACEC	F S P	120 0 0 120	Unique plant association.	Require mining plan, no woodcutting, VRM Class I, prescribed fire plan, no R/Ws.
Dos Cabezas Peaks ACEC	F S P	25 0 0 25	Scenic, historic landmark.	Require mining plan, NSO for mineral leasing, no sand/gravel sales, limit OHV use, no woodcutting, prescribed fire plan, no R/Ws, VRM Class II.
Eagle Creek Canyon ONA ACEC***	F S P	3,160 1,341 4,950 9,451	Mexican free-tailed bat maternity cave, scenery, T&E wildlife, raptors.	Mineral withdrawal, NSO for mineral leasing, acquire State/private lands if available, VRM Class II, prohibit guano extraction, monitor bat cave.
Willcox Playa NNL ACEC	F S P	2,475 803 400 3,678	Pleistocene Epoch lakebed.	Mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, close to OHV use, acquire State/private lands if available, no woodcutting, no R/Ws, VRM Class II.

Table 2-8 (cont.)
Areas Designated as ACECs
Alternative B

Proposed Values or Name	Federal, State Management & Private	Acres	Hazards	Prescription
111 Ranch RNA ACEC	F	2,688	Paleontological (fossil) resources.	Mineral withdrawal, NSO for mineral leasing, no sand/gravel sales, limit OHV use, no woodcutting, no R/Ws, VRM Class II, paleontological clearances.
	S	0		
	P	0		
		2,688		
Peloncillo Mountains ONA ACEC	F	13,439	Cultural resources, scenery, bighorn sheep.	Require mining plan, limit OHV use, rehabilitate oak woodlands, acquire private land if available, no woodcutting, no R/Ws, prescribed fire plan, VRM Class II.
	S	0		
	P	1,489		
		14,928		

* Includes Turkey Creek Riparian ACEC from Alternative A and South Rim ACEC from Alternative C.
** Includes Swamp Springs-Hot Springs Watershed ACEC from Alternative A and Muleshoe Riparian ACEC from Alternative C.
*** Includes Eagle Creek Bat Cave ACEC from Alternatives A and C.
Source: Safford District Files

Appendix 2 includes a detailed discussion of each ACEC nomination, including a determination of relevance and importance, rationale for designation, management prescription and alternatives considered.

2. Recommend the following areas, to Congress, as suitable for inclusion in the National Wilderness Preservation System.

a. Aravaipa Canyon Wilderness Additions - recommend about 14,020 acres suitable for wilderness designation. These lands include the upper reaches of the major side canyons - Painted Cave, Horse Camp, Booger, Hell Hole, Parsons, Wire Corral and Virgus.
b. Galiuro Wilderness Additions - recommend about 11,560 acres suitable for wilderness designation. This area includes the lands east of Jackson Cabin Road along the Galiuro Escarpment. They are lands identical to those already designated wilderness on the National Forest. It also includes lands west of Jackson Cabin Road in the Swamp Springs and Redfield Canyon areas. These additions include 640 acres previously found suitable for wilderness designation through the Environmental Impact Statement for the Coronado National Forest (Forest Service 1986).

Wilderness suitability reports are in Appendix 4.

3. Designate the areas recommended for wilderness as Wilderness Study Areas (WSAs). Existing WSAs and new WSAs designated in this plan will be managed in accordance with the Interim Management Policy and Guildlines for Lands Under Wilderness Review (BLM 1987) until designated wilderness by Congress or released for other uses (see Map 33).

4. Recommend the following river segments, to Congress, as suitable for inclusion in the National Wild and Scenic River System.

a. Gila River through the Gila Box - from Guthrie to just above the Brown Canal Diversion,
   - 15 miles scenic,
   - 10.85 miles recreational (including 0.9 miles on private land), and
   - about 1/4 to 1/2 mile wide on each side of the river following legal subdivisions.
b. San Francisco River south of Clifton to its confluence with the Gila River
   - from Smuggler Mine to the confluence with the Gila River,
   - 2.95 miles scenic (including 0.35 miles on private land), and
   - about 1/4 to 1/2 mile wide on each side of the river following legal subdivisions.

c. Gila River below Coolidge Dam
   - from the gauging station about one-half mile below Coolidge Dam to Winkelman,
   - 12.5 miles wild,
   - 15.2 miles recreational (including 1.4 miles on State land and 2.0 miles on private land), and
   - about 1/4 mile wide on the north side of the river from Coolidge Dam to Dripping Spring (south side of the river is Indian Reservation) and 1/4 mile wide on each side of the river from Dripping Spring to Winkelman, following legal subdivisions.

Wild and scenic river suitability reports are in Appendix 5.

5. Develop a Coordinated Resource Management Plan for the Bear Springs Flat area to direct the management of BLM's multiple use programs. The purpose of the plan is to establish management objectives that direct development of future programs activities toward maintenance and enhancement of watershed condition (see Map 34). When developing the plan, livestock forage use will not be permitted to exceed an average of 40 percent over a full grazing cycle (averaging 3-5 years in duration).

6. Revise the San Simon River Coordinated Resource Management Plan. The purpose of the plan is to direct development of program activities to maintain and enhance watershed condition.

7. Cooperative livestock and watershed management studies will be conducted with the Forest Service, the Nature Conservancy and universities to restore native grasslands and improve the condition of the Aravaipa Watershed. Studies will investigate various "Best Management" techniques.

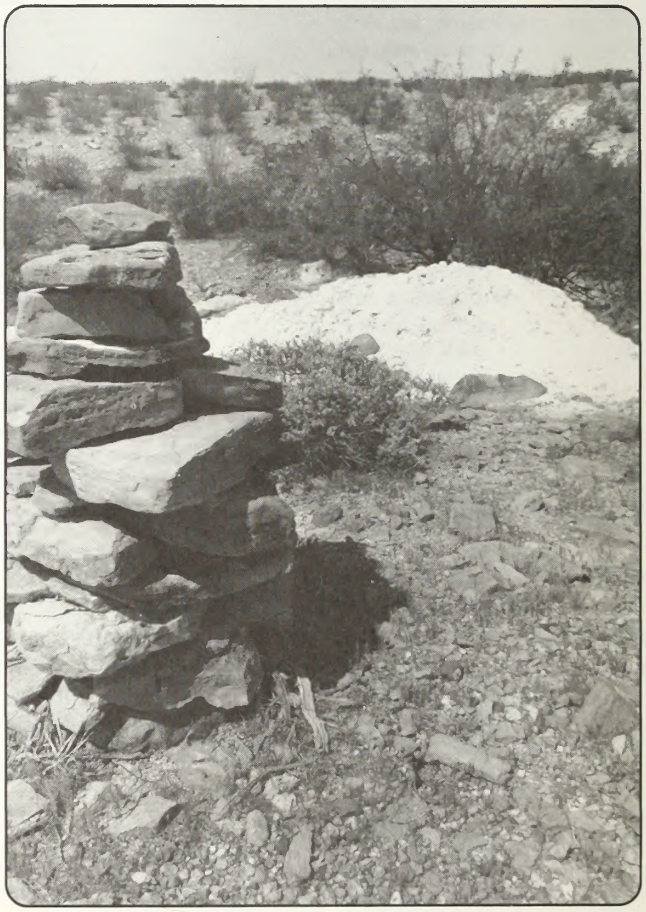
Issue 3 - Off-highway Vehicles

The following actions will be implemented to resolve the Off-highway Vehicles Issue.

1. Initiate procedures to designate 1,708 acres at Hot Well Dunes "Closed" to off-highway vehicle use. A "Closed" area is where off-highway vehicle use is prohibited, even if roads or trails exist within the "Closed" area.

2. Designate the following areas "Closed" to off-highway vehicle use.

a. The river bottoms in the Gila Box ONA ACEC - 242 acres.
b. That part of Oak Grove Canyon in the Aravaipa Watershed ACEC above the Oak Grove Canyon corrals - 82 acres.
c. Desert Grasslands RNA ACEC - 530 acres.
d. Dry Spring RNA ACEC - 825 acres.
e. Willcox Playa NNL ACEC - 2,475 acres.
f. The riparian area of Hot Springs Canyon - 140 acres.



Mining claims for locatable minerals can be filed on most public lands in the Safford District under the proposed RMP.

3. Designate wilderness areas "Closed" to off-road vehicle use.

4. Designate bighorn sheep lambing areas (90 acres) "Limited" to offhighway vehicle use. Lambing areas will be closed to OHV use from February 1 to April 30. For the remainder of the year (May 1 to January 31), OHVs will be limited to existing roads and trails in lambing areas.

5. Designate the remainder of the District (1,387,209 acres) "Limited" to off-highway vehicle use. OHV use will be limited to existing roads and trails occurring at the time of designation and any

new roads approved for construction during the life of the RMP. Existing roads and trails have been identified and are available for review in the District Office. Table 2-9 identifies the acres designated in each category.

6. OHV designations and management will apply to mountain bikes and any other form of mechanized transportation, motorized or non-motorized.

Table 2-9
Acres Designated for
Off-highway Vehicle Use
Alternative B

Off-highway Vehicle Designation	Approximate Acres
Open	0
Limited	1,387,299
Closed	12,701

Source: Safford District Files

Issue 4 - Riparian Areas

The following objectives and actions will be implemented to resolve the Riparian Areas Issue.

The objective for management of riparian areas is to maintain or improve 75 percent of the acres of riparian vegetation in the District in good or excellent condition by 1997 (see Map 34).

The following actions will be implemented to accomplish this objective.

1. Incorporate riparian area objectives into existing and future activity plans.

2. Develop and implement a system to prioritize needed riparian area management. The priorities will be based on management objectives, resource condition, resource conflicts and the potential or capability of a riparian area to respond to treatment.

3. Develop a riparian inventory system. Coordinate development and implementation of the system with other land managing agencies.

4. Complete the inventory of all riparian areas in the District to establish baseline conditions.

5. Establish a monitoring plan for selected riparian areas based upon the management priority system. Implement the plan and evaluate monitoring data. Continue to carry out needed changes in riparian area management through activity plans.

6. Continue to file for instream flow rights on perennial streams or rivers and water rights on springs and ponds to protect and maintain riparian vegetation.

7. Continue to develop grazing systems and modify existing allotment management plans, as necessary, to manage livestock use for the improvement of riparian areas.

8. Do not permit firewood cutting in riparian areas.

9. Permit the removal of non-native vegetation for improvement of riparian vegetation.

10. Maintain and monitor representative relict riparian areas to provide a baseline for future management decisions.

11. Build Timber Draw Dam on the San Simon River to re-establish stream channel and floodplain conditions to promote the redevelopment of the riparian ecosystem.

12. Continue to manage the San Pedro Riparian National Conservation Area following the guidance in the existing management plan.

Power and telephone poles provide perching and nesting sites for many birds.

Management Concern 1 - Wildlife Habitat

The following objectives and actions will be implemented to resolve the Wildlife Habitat Management Concern.

- Maintain and enhance priority species and their habitats.
- Focus management actions on a single species, only when required by the *Endangered Species Act*. Actively promote T&E species recovery to achieve eventual delisting of the species.

- Conserve candidate species to ensure BLM authorized actions do not contribute to the need to list any species as threatened or endangered.
- Manage State listed species to meet State objectives. Other special status species will be managed in accordance with inter- and intra-agency management plans.
- Manage priority wildlife species habitat (vegetation communities) or special features of that habitat (water, riparian vegetation, cliffs, etc.) to maintain or enhance population levels.
- Focus management efforts on enhancing biological diversity.

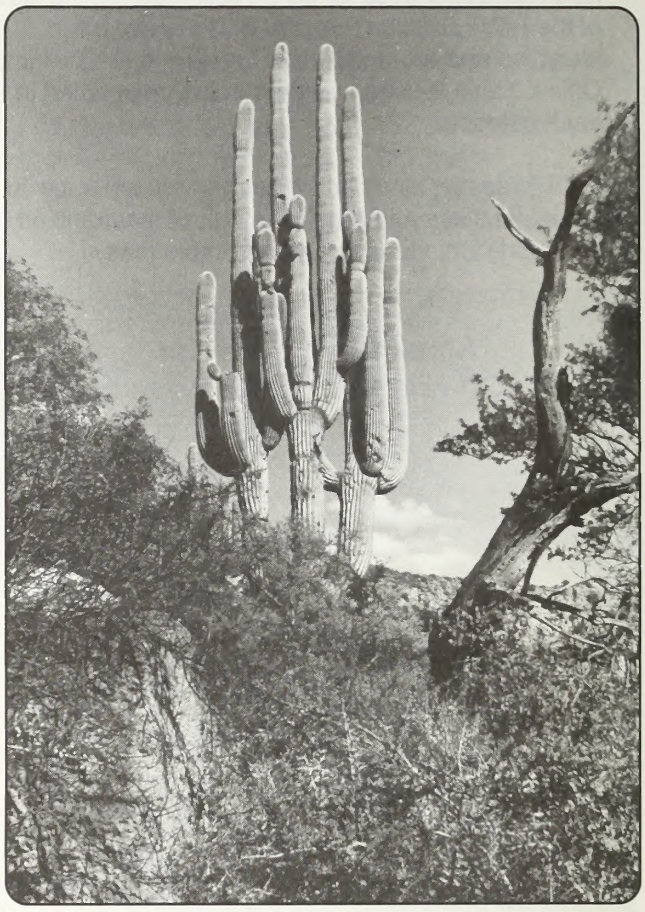
The following actions will be implemented to accomplish these objectives.

1. Establish the following as priority species and habitats. Priority species and habitats in the District include federally listed, proposed and candidate T&E species and their habitat, State listed T&E species and their habitat and other sensitive species and their habitat.

   a. Riparian/aquatic habitat and species dependent on riparian/aquatic habitat - Gila topminnow, desert pupfish, southern bald eagle, loach minnow, spikedace, Gila chub, Colorado roundtail chub, razorback sucker, western yellow-billed cuckoo, gray hawk, Mississippi kite, common black hawk, ferruginous pygmy-owl, willow flycatcher and leopard frog.
   b. Species extirpated from the Safford District - aplomado falcon, woundfin, grizzly bear, wolf, ocelot, jaguar, Colorado River squaw fish, black-tailed prairie dog and river otter.
   c. Saguaro-palo verde - owls, desert tortoise, song birds and Harris hawk.
   d. Desert and Rocky Mountain bighorn sheep.
   e. Desert grasslands - song birds, reptiles, small game and pronghorn antelope.
   f. Oak woodlands and species dependent on oak woodland habitat - white-tailed deer, turkey, black bear and Montezuma quail.
   g. Wetlands - waterfowl, shore birds and leopard frog.
   h. Other species and habitats of interest - peregrine falcon, red bat, Sanborn's long-nosed bat, Mexican long-tongued bat, ferruginous and Swainson's hawks and bat roosts.

   General management objectives for each of the priority species and habitats are in Appendix 6.

2. Inventory the District to determine the presence and abundance of priority species and their habitat.



Saguaros are common in the Lower Sonoran Desert. Large individuals are over 200 years old.

3. Manage habitat for optimum wildlife populations, based on ecological conditions, taking into consideration climatic changes and the goals and objectives of AGFD and the Fish and Wildlife Service (for T&E species).

4. Transplant and augment populations of priority wildlife species, if necessary, (see No. 1 above) to reach management objectives.

5. Monitor priority habitat to determine condition and changes in condition. Inventory the impacts of other activities on wildlife populations and habitat prior to preparation of habitat management plans (HMP). Identify opportunities in HMPs to mitigate adverse impacts and implement the actions needed to correct the problem.

6. Continue to maintain and improve wildlife habitat, with emphasis on priority habitat.

7. Protect springs and associated riparian vegetation for wildlife water, cover and forage.

8. Develop prescribed burning plans in fire dependent vegetation communities to improve habitat conditions for priority wildlife species.

9. Suppress wildfire in sensitive vegetation communities (like palo verde - saguaro) to reduce the detrimental effects on priority wildlife dependent on those communities.

10. Existing HMPs address all public lands in the District except scattered parcels in Cochise County. Two HMPs were completed prior to substantial land exchanges and were not based on realistic ecological boundaries. Redefine all HMP area boundaries to improve site-specific habitat management direction. Develop Sikes Act HMPs, with AGFD for the following areas - Geronimo, Gila Box, Aravaipa-Muleshoe, Peloncillo, Dos Cabezas, San Simon, Cochise and San Pedro. Priorities for revision will be determined in coordination with AGFD.

11. Provide input into livestock allotment management plans (AMPs) to ensure sufficient vegetation is available in bighorn sheep lambing areas for cover and food.

12. Provide input into AMPs in oak woodland habitat to ensure perennial grasses are available to provide adequate cover for priority species.

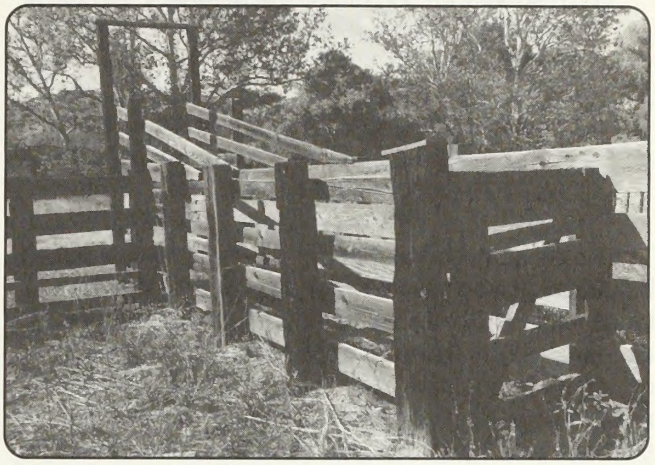
13. Close the following areas to animal damage control activities.

a. T&E species habitat for those techniques that pose a threat to the species.
b. Areas of concentrated recreation use for those techniques that pose a threat to the visitor.

Authorize areas that are open for animal damage control in coordination with the Animal and Plant Health Inspection Service (APHIS) on a yearly basis.

14. Inventory and categorize desert tortoise habitat by 1992. In the interim, place about 26,000 acres of public land in the San Pedro River basin from Cascabel to Winkelman and parts of the Dripping Spring and Pinal Mountains in Category 3. Place about 3,000 acres east of San Manuel in Category 2 (see Appendix 12 for goals and criteria for categorization of habitat).

15. Designate Black Rock RNA, Bonita Creek, Gila Box ONA, Muleshoe, Guadalupe Canyon ONA, Eagle Creek Canyon and Peloncillo Mountains ONA ACECs for the protection of priority wildlife species and their habitat.



Facilities for handling livestock are scattered throughout the Safford District.

Management Concern 2 - Lands and Realty

The following objectives and actions will be implemented to resolve the Lands and Realty Management Concern.

1. The following are objectives for disposal of public lands.

- The order of preference for disposal will be by exchange, *Recreation and Public Purposes* (R&PP) Act or sale.
- Isolated tracts of public land may be disposed of to improve resource management efficiency and service to the public.
- When lands are disposed of next to urban areas, the resulting boundaries will be manageable, fenceable and identifiable.
- Prior to disposal, lands will be evaluated for significant cultural and natural resource values.

To accomplish these objectives, dispose of 67,716 acres of public lands in the following areas.

a. Gila Valley area.
b. southern Pinal Mountain area.
c. Dripping Spring Wash area.
d. Bisbee area, excluding the Juniper Flats block.
e. Tombstone area.
f. Douglas area.
g. York Valley area.
h. San Simon area.
i. Three-Way R&PPs.
j. R&PP sanitary landfill leases.

The areas identified above are locations where public lands have been identified for disposal. All public lands within these areas do not have to be sold or exchanged. Unforeseen future land management concerns or public demand may also necessitate the need for other public lands in retention areas to be sold or exchanged. The parcels considered at that time would be subject to BLM's planning process and the *National Environmental Policy Act*. BLM may also desire to retain certain lands within the disposal areas. Upon evaluation of future land disposals, BLM may identify resource values worthy of retention in public ownership.

The Turkey Creek cliff dwelling is one of the most intact prehistoric structures of its kind in southeastern Arizona.

Appendix 7 shows the lands that meet the FLPMA criteria for sale. Although these lands qualify for sale, BLM's preferred order of disposal is exchange, *Recreation and Public Purposes Act* lease/patent or sale.

2. The following are objectives for land acquisition.

- Acquire lands with high public values that compliment existing manage ment programs.
- Consolidate ownership pattern to improve management efficiency.
- Improve service to the public.

To accomplish these objectives, acquire 92,650 acres of State land in the following areas.

a. Spear Ranch.
b. Bryce Ranch.
c. scattered parcels in the Gila Mountains.
d. upper Turkey Creek.
e. Dripping Spring and Mescal Mountains.
f. upper San Francisco River.
g. west of Guadalupe Canyon.
h. Baker Canyon.
i. Juniper Flat (Mule Mountains).
j. Turtle Mountain/Eagle Creek.
k. Willcox Playa.
l. Babocomari River.
m. Redfield Canyon.
n. San Simon Cienega.
o. ACECs, when the management prescription identifies the need to acquire State lands within or adjacent to the ACEC.
p. other State lands that will accomplish BLM's acquisition objectives.

Further, acquire the following types of private land, generally within or adjacent to public lands, if they become available.

a. riparian habitat.
b. watersheds of important riparian areas.
c. high value wildlife habitat, such as T&E species areas and major migration corridors.
d. administrative sites.
e. land providing access to public lands.
f. significant cultural and paleontological properties.
g. other lands with high public resource values such as inholdings in ACECs and other types of special management areas.
h. other private lands that will accomplish BLM's acquisition objectives.

3. Retain all lands, not identified for disposal, in public ownership to be managed under the principles of multiple use and sustained yield. Some lands identified for retention may be needed for future disposal. Unforeseen future land management concerns or public demand may necessitate the need for other lands to be sold or exchanged. Any future disposal actions will be subject to BLM's planning process and NEPA.

4. Designate the following existing utility lines as corridors for future utility needs across the District.

a. AEPCO line - 1 mile wide.
b. TEPCO line - 1 mile wide.
c. Public Service Company of New Mexico - 1 mile wide.
d. All American pipeline (San Simon Resource Area only) - 1 mile wide.
e. San Pedro - 1 mile wide (660 ft. wide where it crosses the San Pedro Riparian NCA.
f. Hayden/Christmas - 1 mile wide.

All future major cross-District utility rights-of-way will be routed in these corridors (see Map 35).

5. Establish the Muleshoe ACEC as a right-of-way avoidance area. Every attempt will be made to avoid this area with major cross-District rights-of-way to minimize or eliminate conflicts with sensitive resource values.

6. Attach needed site-specific environmental protection stipulations to all rights-of-way.

7. Establish the following areas as right-of-way exclusion areas.

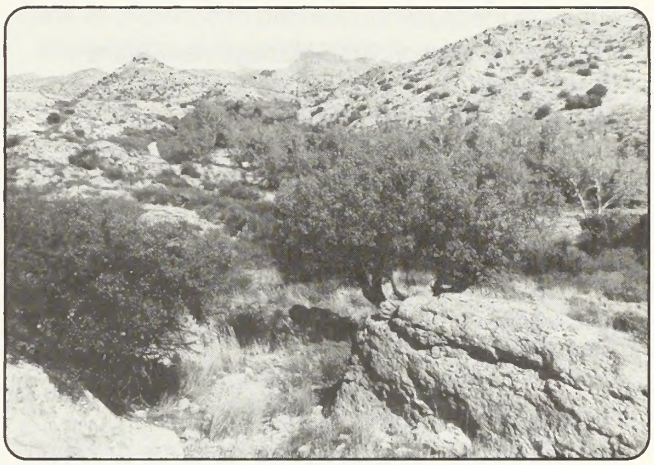
a. Gila Box ONA ACEC.
b. Guadalupe Canyon ONA ACEC.
c. Bowie Mountain Scenic ACEC.
d. Coronado Mountain RNA ACEC.
e. Dos Cabezas Peaks ACEC.
f. Willcox Playa NNL ACEC.
g. 111 Ranch RNA ACEC.
h. Peloncillo Mountains ONA ACEC.
i. wilderness study areas.
j. designated wilderness areas.

8. Designate Guthrie Peak, Juniper Flat in the Mule Mountains and the west end of Dos Cabezas Mountains as communication sites (see Map 35). Site plans will be prepared for all communication sites and designation of new sites will be analyzed on a case-by-case basis.

9. Complete the withdrawal review process. Revoke all withdrawals determined to no longer serve their original or intended purpose.

10. Withdraw 12 acres for the proposed Safford District Office administrative site (T. 7 S., R. 25 E., Sec. 24, that part of the W1/2NW1/4NE1/4 lying north of Golf Course Road) from the public land laws and the mining and mineral leasing laws.

11. Withdraw 10 acres for the Oliver Knoll atmospheric deposition monitoring station (T. 4 S., R. 24 E., Sec. 22, SW1/4SE1/4SE1/4NE1/4, SE1/4SW1/4SE1/4NE1/4, NW1/4NE1/4NE1/4SE1/4, NE1/4NW1/4NE1/4SE1/4) from the public land laws and the mining laws. Mineral leasing will be permitted with a "No Surface Occupancy" stipulation. Establish it as an administrative site.



Guadalupe Canyon has a unique overlap of Chihuahuan, Rocky Mountain and Sierra Madrean vegetative communities.

12. Withdraw 37,056 acres, including administrative sites and campgrounds, from mineral entry to preserve important resource values. Table 2-11 identifies the areas and acreages to be withdrawn. Appendix 9 lists the legal descriptions of the areas to be withdrawn.

13. Withdraw 1,134 acres from mineral leasing to preserve important resource values. Table 2-12 identifies the areas and acreages to be withdrawn. Appendix 10 lists the legal descriptions of the areas to be withdrawn.

Management Concern 3 - Outdoor Recreation and Visual Resource Management

The following actions will be implemented to resolve the Outdoor Recreation and Visual Resource Management Concern.

1. Designate the following areas as Special Recreation Management Areas (SRMAs) to manage current recreation use.

a. Aravaipa Canyon.
b. Bonita Creek.
c. Lower Gila River from Coolidge Dam to Winkelman.
d. Gila Box.
e. lands in the San Pedro Riparian NCA not included in the *San Pedro River Riparian Management Plan* (BLM 1989).

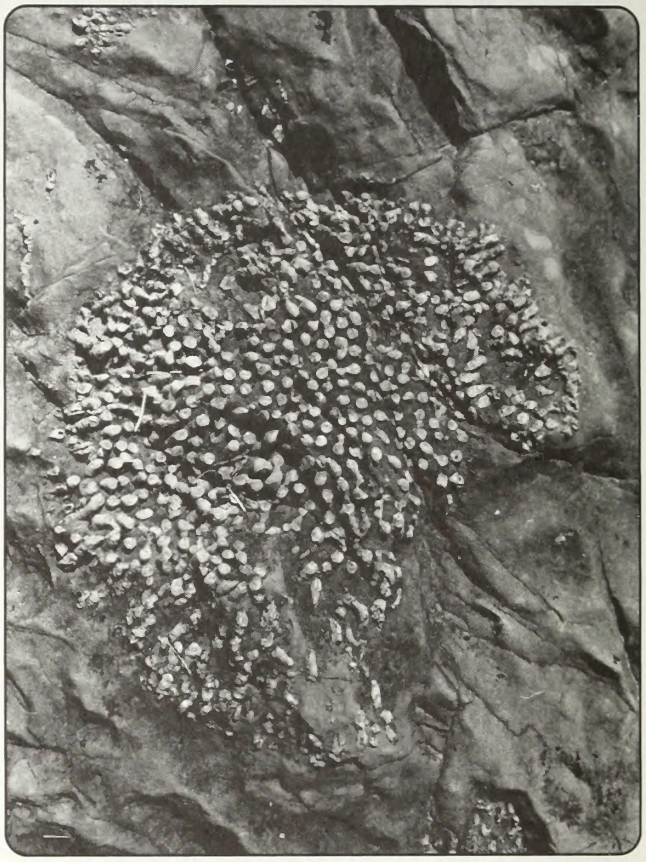
Prepare Recreation Area Management Plans (RAMPs) for designated SRMAs, as needed. Manage the remainder of the District as an Extensive Recreation Management Area for dispersed recreation use.

2. In the RAMPs, determine which public lands will be managed for interpretation and education and which sites will be signed for interpretation and education.

3. Continue to manage Aravaipa Canyon Wilderness following the guidance of the Aravaipa Canyon Wilderness Management Plan (BLM 1988).

4. Prepare project plans for the following areas that need some recreation planning and development.

a. Gila Mountain Crest Trail.
b. Galiuro/Aravaipa/Santa Teresa Trail, in cooperation with the Forest Service.
c. Watson Wash Hot Well.
d. Safford-Morenci Trail.
e. Red Knolls.
f. Guadalupe Canyon.
g. Black Hills Rockhound Area.
h. Round Mountain Rockhound Area.
i. Fort Bowie/Helen's Dome Trail, in cooperation with the National Park Service.



Many fossils, such as this 350-million-year-old coral, can be found in the Mescal Mountains.

5. Prohibit floatboating, for public safety, on the Gila River from Coolidge Dam to a point about 2 miles upstream from Dripping Spring Wash.

6. Continue the exclusion of livestock from 159 acres of public land around Fourmile Canyon Campground.

7. Unless otherwise established, the maximum length of stay for recreation purposes in any one location is 14 days.

8. Develop a District sign plan to determine which roads, sites and facilities will be signed for interpretation, education, information and public safety.

9. Designate the following as VRM Class I areas to preserve scenic quality.

a. designated wilderness areas.
b. rivers designated "Wild" under the Wild & Scenic Rivers Act.
c. Black Rock RNA ACEC.
d. Bowie Mountain Scenic ACEC.
e. Coronado Mountain RNA ACEC.

10. Designate the following as VRM Class II areas to preserve scenic quality and to provide for limited modification of the landscape.

a. Bonita Creek Canyon in the Bonita Creek Watershed ACEC.
b. Gila Box ONA ACEC.
c. Bear Springs Badlands ACEC.
d. Guadalupe Canyon ONA ACEC.
e. Dos Cabezas Peaks ACEC.
f. Eagle Creek Canyon.
g. Willcox Playa NNL ACEC.
h. 111 Ranch RNA ACEC.
i. Peloncillo Mountains.
j. Muleshoe ACEC.
k. Babocomari River.
l. Gila River Canyon (below Coolidge Dam).
m. rivers designated "Scenic" or "Recreational" under the Wild & Scenic Rivers Act.
n. wilderness study areas (interim).

11. Designate the following as VRM Class III areas to preserve scenic quality while providing for management activities that are evident but do not dominate the landscape.

a. all major highway corridors.
b. public lands north of Morenci.
c. San Francisco River above the Town of Clifton.
d. Government Peak and Happy Camp Canyon area of the Dos Cabezas Mountains.
e. east of Bowie Mountain around the marble quarry.
f. lands adjacent to the San Pedro Riparian NCA.
g. Whitlock Mountains.
h. Orange Butte.
i. Gila Mountains.
j. uplands surrounding Bonita Creek Canyon in the Bonita Creek Watershed ACEC.
k. Mescal Mountains.
l. Jackson Mountain.
m. Brandenburg Mountain.
n. uplands surrounding Aravaipa Canyon Wilderness in the Aravaipa Watershed ACEC.

12. Designate the remainder of the District as a VRM Class IV area. Appendix 8 explains the VRM management class objectives. The following table identifies the acres designated by VRM class.

Table 2-10
Acres by Visual Resource Management Class
Alternative B

VRM Class	Acres Designated
I	13,358
II	89,370
III	479,461
IV	817,811

Source: Safford District Files

Management Concern 4 - Energy and Minerals

1. Mining notices and plans of operation received under the surface management regulations (43 CFR 3809) will be reviewed for impacts to other resources. Mitigation and reclamation measures will be provided to prevent unnecessary or undue degradation of the environment.

2. Withdraw 37,056 acres from mineral entry to preserve important resource values. Table 2-11 identifies the areas and acreages to be withdrawn. Appendix 9 lists the legal description of the area to be withdrawn.

Table 2-11
Areas/Acres to be Withdrawn From Mineral Entry
Alternative B

Area Withdrawn	Acres Withdrawn
Black Rock RNA ACEC	309
Bonita Creek ACEC	2,467
Gila Box ONA ACEC	14,155
Table Mountain RNA ACEC	1,220
Desert Grassland RNA ACEC	790
Dry Spring RNA ACEC	825
Bear Springs Badlands ACEC	4,127
Guadalupe Canyon ONA ACEC	378
Bowie Mountain Scenic ACEC	3,600
Eagle Creek Canyon ONA ACEC	3,642
Willcox Playa NNL ACEC	2,475
111 Ranch RNA ACEC	2,688
Fourmile Canyon Campground	159
Oliver Knoll Atmospheric Deposition Monitoring Station	10
District Office Site - proposed	12
Yuma Wash Archaeological Site	120
Tres Alamos Archaeological Site	160
Midway Cave Archaeological Site	40
Total	37,056

Source: Safford District Files

3. Administrative sites and campgrounds will be withdrawn from entry under the mining laws (see Appendix 9 for legal descriptions).

4. Withdraw 1,134 acres from mineral leasing to preserve important resource values. Table 2-12 identifies the areas and acreages to be withdrawn. Appendix 10 lists the legal descriptions of the areas to be withdrawn.

Table 2-12
Areas/Acres to be Withdrawn From Mineral Leasing Alternative B

Area Withdrawn	Acres Withdrawn
Black Rock RNA ACEC	309
Dry Spring RNA ACEC	825
Total	1,134

Source: Safford District Files

5. Energy and other leaseable minerals will be leased subject to the following conditions.

a. Standard environmental protection stipulations will be applied to all leases in open areas.
b. Surface occupancy will not be permitted in riparian areas (see Map 34).
c. Surface occupancy will not be permitted in campgrounds or admin istrative sites.
d. Surface occupancy will not be permitted in established bighorn sheep lambing areas from February 1 to April 30 of each year.
e. Surface occupancy will not be permitted at Tres Alamos, Yuma Wash or Midway Cave archaeological sites.

6. Issue mineral and energy leases with a "No Surface Occupancy" stipulation on 45,952 acres to protect sensitive resource values. Table 2-13 identifies the areas and acreages to which the NSO stipulation will apply.

Table 2-13
Areas/Acres to be Leased With a "No Surface Occupancy" Stipulation Alternative B

NSO Area	NSO Acres
Bonita Creek ACEC	2,467
Gila Box ONA ACEC	14,155
Aravaipa Watershed ACEC	537
Table Mountain RNA ACEC	1,220
Desert Grasslands RNA ACEC	790
Bear Springs Badlands ACEC	4,127
Guadalupe Canyon ONA ACEC	5,838
Bowie Mountain Scenic ACEC	3,600
Dos Cabezas Peaks ACEC	25
Eagle Creek Canyon ONA ACEC	3,642
Willcox Playa NNL ACEC	2,475
111 Ranch RNA ACEC	2,688
Riparian Areas - other than those located in ACECs or wilderness	3,797
Desert Bighorn Sheep Lambing Areas	90
Fourmile Canyon Campground	159
District Office Site - proposed	12
Oliver Knoll Atmospheric Deposition Monitoring Station	10
Yuma Wash Archaeological Site	120
Tres Alamos Archaeological Site	160
Midway Cave Archaeological Site	40
Total	45,952

Source: Safford District Files

7. Prohibit the sale of mineral materials (sand, gravel, etc.) on 116,707 acres to protect sensitive resource values. Table 2-14 identifies the areas and acreages where mineral materials will not be sold.

Table 2-14
Areas/Acres Where Mineral Materials Will Not Be Sold
Alternative B

Area	Acres
Black Rock RNA ACEC	309
Bonita Creek ACEC	2,467
Gila Box ONA ACEC	14,034
Aravaipa Watershed ACEC	70,000
Table Mountain RNA ACEC	1,220
Desert Grasslands RNA ACEC	790
Dry Spring RNA ACEC	825
Bear Springs Badlands ACEC	4,127
Guadalupe Canyon ONA ACEC	5,838
Bowie Mountain Scenic ACEC	4,190
Dos Cabezas Peaks ACEC	25
Eagle Creek Canyon ONA ACEC	3,642
Willcox Playa NNL ACEC	2,475
111 Ranch RNA ACEC	2,688
Riparian Areas - other than those located in ACECs or wilderness	3,797
Tres Alamos Archaeological Site	160
Yuma Wash Archaeological Site	120
Total	116,707

Source: Safford District Files

8. Sale of mineral materials (sand, gravel, etc.) will not be permitted in areas with riparian vegetation (see Map 34).

9. The standard list of environmental protection stipulations will be attached to all mineral material sale authorizations. Any needed sitespecific stipulations will also be added.

Management Concern 5 - Cultural Resources

The following objectives and actions will be implemented to resolve the Cultural Resources Management Concern.

- Manage for Information Potential.
- Manage for Public Values.
- Manage for Conservation.

Table 2-15 identifies the actions that will be implemented to achieve each objective. Appendix 13 defines each objective.

Riparian areas provide nesting habitat for many species of birds.

To accomplish the cultural resource management objectives, the following actions will be implemented. Critical protection will be considered more important than planning or threatened field studies involving non-critical protection. This does not mean, however, that all critical protection work will be done before any planning or other actions.

1. Prioritize implementation of planned cultural resource actions according to the degree of need as defined below:

   a. First priority will be given to planned actions protecting threatened and significant cultural resources that would otherwise be lost. This includes obtaining important data from individuals (ethnographic information) that may not be available in the future.
   b. Second priority will be given to the preparation of management plans directing how the District manages its cultural resources.
   c. Third priority will be given in cases where there is good reason to believe that cultural resources are being adversely impacted even though they are not located in any area of proposed activity. Plan ned actions in these instances will seek to determine the nature and extent of the impacts and to identify corrective management actions. Third priority will also be given to planned actions protecting significant threatened cultural resources where the degree of damage or threat of damage is low (non-critical).
   d. Fourth priority will be given to non-field studies designed to collect data for management or scientific purposes. This priority will also be given to nominating cultural properties to the National Register of Historic Places (NRHP).

e. Fifth priority will be given to collecting cultural resource field data for planning purposes and for resource utilization not part of any protection or mitigation measure (for example, to allow a cultural property to be excavated solely for scientific research purposes, or to allow a property to be interpreted to the public).

2. Use the following administrative and physical measures to protect cultural properties:

a. **Signing** - place antiquity or interpretive signs on cultural properties being looted or vandalized.
b. **Withdrawal** - withdraw areas from location under the mining laws to protect significant cultural properties. Retain significant cul tural properties in public ownership to conserve them for the future.
c. **Access** - install fences or other barriers to restrict or elimi nate public access to cultural properties that are being looted or vandalized. Disallow firewood cutting for public use in areas with high cultural resource values.
d. **Patrol** - patrol threatened cultural properties with personnel from the Arizona Site Steward Program, BLM's Cultural Resource Assistants and Law Enforcement Rangers and community volunteers.
e. **Fire Control** - provide input to the development of a fire man agement plan to protect cultural resources. Assign a Cultural Resource Advisor to all extended attack fires whenever heavy equip ment is used.
f. **Stabilization** - stabilize deteriorating standing architectural structures on significant cultural properties.
g. **Detailed Recording** - record all known prehistoric cliff dwellings and related structures in the District and the Yuma Wash and Midway Caves sites.
h. **Public Education** - develop and implement annual Public Affairs Action Plans for cultural resources.

3. Complete a Class III cultural resource inventory and intensive testing in and adjacent to the Timber Draw project area.

4. Nominate at least six eligible cultural properties in the District to the National Register of Historic Places within the lifespan of the RMP.

5. Eliminate livestock grazing on the Tres Alamos site.

6. Conduct ethnographic studies in Bonita Creek, Muleshoe Ranch, Pima Mormon Canal System, Civilian Conservation Corps (CCC) camps and project areas and Aravaipa Canyon Wilderness and adjacent lands.

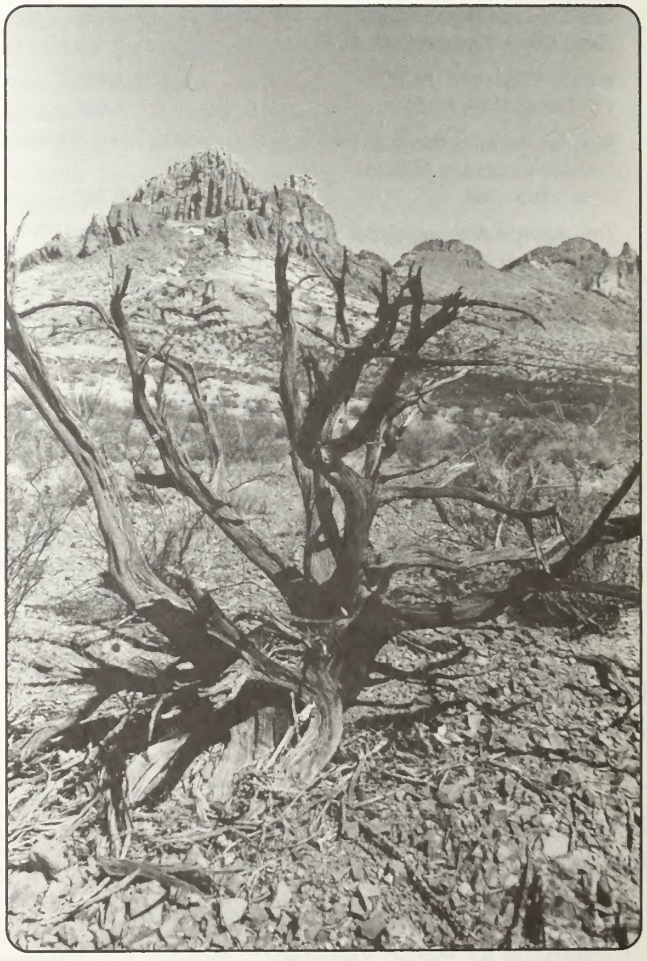
7. Revise the Safford District Rock Art Cultural Resource Management Plan.

8. Conduct a records search inventory and personal interviews to determine the extent of looting and vandalism to cultural resources.

9. Conduct Class II archaeological inventories in Aravaipa Canyon Wilderness and adjacent lands and Muleshoe Ranch to enhance our knowledge of cultural resources for future management decisions.

10. Conduct a Class III archaeological inventory in Bonita Creek Canyon to enhance our knowledge of cultural resources for future management decisions.

11. Conduct a cooperative study with the Soils Program to determine the effects of soil erosion on cultural resources in the San Simon drainage.



A gnarled juniper is contrasted against the jagged cliffs of the highly scenic Peloncillo Mountians.

Table 2-15
Management Objectives Achieved by Planned Actions
Alternative B

Actions	Manage for Information Potential	Manage for Public Values	Manage for Conservation
1. Use implementation priority criteria	N/A	N/A	N/A
2. Use protection measures	X	X	X
3. Inventory and test at Timber Draw	X		
4. Nominate properties to National Register	O	O	X
5. Eliminate grazing - Tres Alamos	X		
6. Conduct ethnographic studies -			
Bonita Creek	X	O	O
Muleshoe Ranch	X	O	O
Mormon Canals	X	O	O
CCC camps & projects	X	O	O
Aravaipa area	X	O	O
7. Revise Rock Art CRMP	X	O	O
8. Study vandalism	X		
9. Conduct Class II inventories -			
Aravaipa area	X	O	O
Muleshoe Ranch	X	O	O
10. Conduct Class III inventory -			
Bonita Creek	X	O	O
11. Study San Simon erosion	X		

X - Primary Objective O - Secondary Objective N/A - Not Applicable
Source: Safford District Files

Management Concern 6 - Soil Erosion

The following objectives and actions will be implemented to resolve the Soil Erosion Management Concern.

- Reduce accelerated erosion.
- Restore eroded floodplains of the San Simon River and in the Bear Springs Flat area (see Map 34).
- Reduce silt and salts entering the Gila River from San Simon River.

The following actions will be implemented to accomplish these objectives.

1. Develop activity plans, where needed, to initiate rehabilitation of eroded areas.

2. Construct Timber Draw Dam to continue efforts to rehabilitate eroded areas of the San Simon River (see Map 34).

3. Continue reseeding grasses and riparian vegetation on restored areas behind erosion control structures. Manage livestock with fencing or other methods to protect these areas.

4. Protect the eroded floodplain of the San Simon River through appropriate livestock management.

5. Repair Oso Largo Detention Dam (see Map 34) in the Bear Springs Flat area to continue rehabilitation of eroded lands. Assess the land upstream of Oso Largo Dam to determine the need for maintenance of existing structures or the need for additional structures. Make all structures functional without adverse impacts to the ACEC located in the upper end of the eroded area.

6. Investigate methods to increase vegetation cover in the Bear Springs Flat area without adverse impacts to the ACEC located in the upper end of the eroded area.

7. Continue seasonal livestock use in the Bear Springs Flat area.

8. Cap or contain the flow of flowing wells in the San Simon Watershed if salinity exceeds 3,000 ppm.

Management Concern 7 - Vegetation

The following objectives and actions will be implemented to resolve the Vegetation Management Concern.

1. The objective for management of upland vegetation is to restore and maintain plant communities for wildlife, watershed condition and livestock. The desired plant communities will be determined in the preparation of activity plans (allotment management plans, habitat management plans, etc.). An ecological site inventory will be completed as allotment managment plans are prepared or existing plans revised.

2. The objective for management of threatened, endangered and special status plant species is to manage the public lands to preserve occurrences of special status species and to achieve the eventual delisting of threatened and endangered species. To accomplish this objective, inventory and monitor T&E plants in the following priority order.

a. Listed threatened *Coryphantha robbinsorum* and *Vauquelinia pauciflora*.
b. Candidate category I species - *Aster lemonii* and *Rumex orthoneurus*.
c. Re-inventory and monitor other candidate species known to occur on public lands.
d. Re-inventory and monitor *Echinocereus triglochidiatus* - listed endangered species.

3. Land treatments (vegetation manipulation) will be used to decrease invading woody plants and increase grasses and forbs for wildlife, watershed condition and livestock. Public lands, where vegetation condition is less than desired to meet management objectives, will be identified for treatment through activity plans. Treatments may

Pronghorn were released on semi-desert grasslands east of the Peloncillo Mountains through efforts of the BLM and Arizona Game and Fish Department.

include various artificial (mechanical, chemical or prescribed fire) methods. Management objectives for riparian vegetation can be found under *Issue 4* - Riparian Vegetation. To achieve the objective for vegetation manipulation, implement those desirable treatment methods that increase vegetation cover and decrease soil erosion.

4. Do not provide firewood or other vegetative products for public use.

The 111 Ranch, with its many unusual rock formations, is one of only four Class I fossil sites in southeastern Arizona.

Management Concern 8 - Water Resources

The following objectives and actions will be implemented to resolve the Water Resources Management Concern. These objectives are designed to support on-going programs (range, riparian, recreation, wildlife, etc.) while providing data to be used for future management decisions.

1. The objective for management of groundwater is to conserve while using water for prudent resource management purposes.

The following actions will be implemented to accomplish the groundwater management objectives.

a. Cap unusable or unsuitable wells to prevent contamination of acquifers and to contain highly saline water.
b. Restrict artesian flow to meet specific program needs.
c. Inspect and maintain water systems to prevent unnecessary loss of water.

Further, initiate a groundwater study for the San Simon Watershed to determine the level of the various aquifers, changes in the level of the aquifers, the water quality of the aquifers and availability of groundwater for BLM's resource management program. Prepare a management plan for use and conservation of water (quality and quantity).

2. The objective for management of water quality is to maintain or enhance water quality at, or above, established standards for designated uses to meet management goals for each water source. BLM will adhere to federal and State water quality laws and standards.

The following actions will be implemented to accomplish the water quality management objective.

a. Support other resource programs in the implementation of this plan and monitor the effectiveness of planning decisions.
b. Continue the existing water quality testing program in the District (see Appendix 11).
c. Initiate data collection where there is a suspected or known pollution threat or hazard to water quality.
d. Develop an activity plan and initiate management actions needed to mitigate water quality degradation detected through water quality monitoring.
e. Develop a District Water Quality Monitoring Plan, including recommendations for Unique Waters nominations.
f. Share data with other water quality managing agencies.

3. Evaluate Aravaipa Creek, Mescal Creek, Redfield Canyon, Swamp Springs Canyon, Hot Springs Canyon, Bass Canyon, Wildcat Canyon and Double R Canyon to determine their suitability for Unique Waters designation. Nominate those that meet the required standards.

4. Evaluate Turkey Creek, Deer Creek, Left Fork of Markham Creek and Grapevine Creek (intermittent streams) for Unique Waters designation, if their flow becomes perennial. Nominate those creeks that meet the required standards.

5. Manage stream segments designated as Unique Waters to maintain or enhance water quality standards and protect the associated resources.

6. Evaluate the long-term Districtwide resource management needs for ground and surface water.

7. Evaluate the Gila River, San Francisco River, Redfield Canyon, Hot Springs Canyon, Swamp Springs Canyon, Bass Canyon, Wildcat Canyon, Double R Canyon, Bonita Creek and Mescal Creek to determine the quantities of instream flow (water right) needed to meet resource management objectives. File on the quantities of water needed to meet management objectives for those streams where no instream flow filings have been made.

8. Evaluate Turkey Creek, Deer Creek, Left Fork of Markham Creek, Guadalupe Canyon and Johnny Creek (intermittent streams), if their flow becomes perennial, to determine the quantities of instream flow (water right) needed to meet resource management objectives. File on the quantities needed to meet management objectives.

9. Purchase water rights, when necessary, to protect threatened resource values.

Management Concern 9 - Air Quality

The following objectives and actions will be implemented to resolve the Air Quality Management Concern.

- Continue to manage the airshed in accordance with State of Arizona Class II standards, unless re-designated. Class II standards allow for moderate deterioration of air quality associated with moderate, well-controlled industrial and population growth.
- Comply with all federal and State statutes pertaining to air quality and cooperate with the State of Arizona in carrying out the State Implementation Plan.

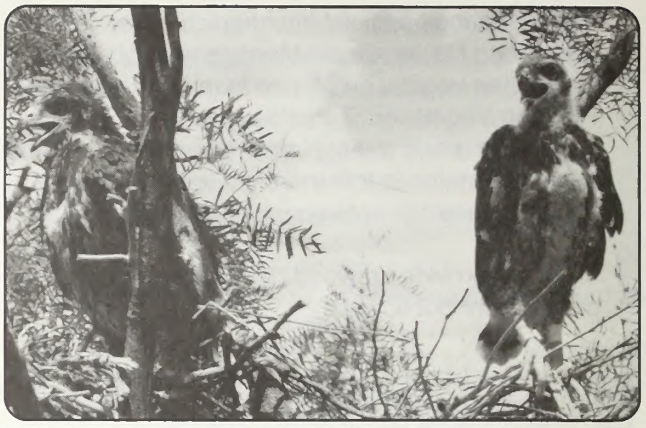
The following actions will be implemented to accomplish these objectives.

1. When implementing BLM or BLM-approved activities, minimize surface disturbances to prevent the addition of large quantities of dust to the air. When surface disturbances occur, require appropriate stipulations to mitigate the impact to air quality.

2. Continue the rehabilitation of erosion in the San Simon Watershed and the Bear Springs Flat area (see Map 34) to reduce airborne dust.

3. Conduct prescribed fire with prior approval of the Arizona Bureau of Air Quality Control.

4. Continue operation of the Oliver Knoll atmospheric deposition monitoring station as part of the nationwide network.



Harris hawks nest in large mesquites and saguaros in the Safford District.

Management Concern 10 - Paleontological Resources

The following objectives and actions will be implemented to resolve the Paleontological Resources Management Concern.

- Preserve a representative sample of Class I paleontological localities.
- Ensure that BLM actions avoid inadvertent damage to paleontological resources.
- Manage paleontological resources to preserve their scientific and interpretive values.
- Give emphasis to management of Class I and II sites.
- Provide opportunities for education and interpretation.
- Provide opportunities for scienific research.

Implement the following actions to accomplish the objectives for management of paleontological resources.

1. Continue inventories in areas of proposed activities to identify the presence of paleontological resources and determine measures needed to mitigate anticipated impacts.

2. Conduct field studies at Bear Springs Badlands, 111 Ranch and Hot Well Dunes.

   a. Provide data on the nature, extent and scientific significance of fossils.
   b. Determine the condition of exposures and factors that may be affecting them.
   c. Determine the suitability of these areas for inclusion in the National Natural Landmarks Program. Nominate qualifying areas.

3. Prepare a Paleontological Resources Management Plan for the District.

4. Write a detailed overview of the biological and geological history of the District with emphasis on the paleontological resources important to scientific research.

Alternative C

This alternative provides more emphasis on use and development of the public lands than *Alternative B.* Fewer areas are managed to protect natural and cultural resources and specific prescriptions are less restrictive to use and development activities. While ACECs are still designated, they are generally smaller and less restrictive on other uses. No wilderness areas or wild and scenic rivers are recommended to Congress under this alternative. Protection and enhancement of riparian areas and T&E wildlife species are emphasized. Scientific use and recreational/interpretive development of cultural resources would be emphasized. Most of the planning area is "Open" to off-highway vehicles.

Issue 1 - Access

The following actions will be implemented to resolve the Access Issue.

1. Prepare a District Transportation Plan that includes identification of access needs and closures, a road and trail numbering system, sign needs, maintenance needs, coordination with other agencies and landowners, etc.

2. Minimize the impact of existing and proposed access routes on natural and cultural resources.

3. Reserve, as needed, access across public lands that are disposed of by sale, exchange or other means.

4. Obtain public and administrative access to the public lands.

5. Roads may be closed, as needed, for visitor use management, resource protection and to accomplish resource management objectives.

6. Obtain legal access, for public and administrative use, across private lands in 37 locations Districtwide (see Appendix 1) and across other State and private lands as determined in the future.

7. Reconstruct the following roads to provide vehicle access for the administration and use of the public lands.

a. Virgus Canyon Road, about 1/2 mile - T. 6 S., R.18 E., Secs. 27, 34, 35.
b. Military Trail, about 3 miles - T. 3 S., R.16E., Secs. 13, 14, 23.
c. Buckeye Canyon Road, about 1 mile - T. 13 S., R.27 E., Secs. 26, 27, 34 and T. 14 S., R. 27 E., Sec. 9.
d. Left Fork of Markham Creek Road, about 3 miles - T. 3 S., R.24E., Sec. 36; T. 4 S., R. 24 E., Secs. 1, 12; and T. 4 S., R. 25 E., Secs. 6, 7, 18.
e. Jackson Cabin Road, about 5 1/2 miles - T.11S., R. 20 E., Secs. 22, 26, 27, 35, 36; T. 12 S., R. 20 E., Secs. 1, 2, 11, 24; and T. 12 S., R. 21 E., Secs. 30, 31.
f. East Turkey Creek Road, about 3/4 mile - T.7S., R. 19 E., Secs. 4, 5.
g. Other roads as determined in the future.

8. Obtain legal access, for public and administrative use, on existing foot and horse trails across private lands in the following locations.

a. Aravaipa Canyon Wilderness Trail from the west trailhead (at the administrative site) to the west boundary of the wilderness - T.6S., R. 17 E., Secs. 13, 24.
b. Babocomari River Trail - T. 20 S., R. 20 E., Sec. 13 and T.20S., R. 21 E., Sec. 18.
c. Safford-Morenci Trail where it crosses Bonita Creek - T. 5 S., R. 27 E., Secs. 10, 11.
d. Safford-Morenci Trail where it crosses the San Carlos Indian Reservation - T. 4 S., R. 28 E., Sec. 31.
e. Hell Hole Canyon Trail and trailhead at Dry Camp - T. 6 S., R.19 E., Sec. 7.

Issue 2 - ACECs and Other Types of Special Management

The following actions will be implemented to resolve the ACECs and Other Types of Special Management Issue.

1. Designate 15 ACECs totalling 81,594 acres of public land to protect important natural and cultural resources. Table 2-16 describes the specific areas, acreages, values and management prescriptions. Maps 1-26 and 32 show the location of each proposed ACEC.

Table 2-16
Areas Designated as ACECs
Alternative C

Proposed Name	Federal, State & Private Acres		Values or Hazards	Management Prescription
Black Rock RNA ACEC	F	189	T&E species, unique plant association.	Require mining plan, NSO for mineral leasing, closed to OHV use, research, vegetation treatment outside ACEC.
	S	0		
	P	0		
		189		
Bonita Creek ACEC	F	1,572	City water, T&E species, riparian habitat, cultural resources, native fish, scenery.	Limit OHVs, NSO for mineral leasing, require mining plan, restrict recreation developments, monitor water quality, rehabilitate riparian vegetation, acquire private land if available.
	S	0		
	P	1,193		
		2,765		
Gila Box ONA ACEC	F	10,062	Desert rivers, riparian habitat, T&E species, bighorn sheep, scenery, recreation use, cultural sites.	Require mining plan, NSO for mineral leasing, limit OHV use, acquire private lands if available, no woodcutting, VRM Class II.
	S	0		
	P	445		
		10,507		
South Rim ACEC*	F	40,000	Valuable watershed, including a wilderness, T&E species, native fish, recreation opportunities, bighorn sheep, riparian vegetation.	Limit OHV use, close Oak Grove Canyon to OHV use, NSO for mineral leasing in riparian zones, no sand/gravel sales, require mining plan, no livestock after expiration of lease, monitor water quality, rehabilitate riparian and upland vegetation, VRM Class II.
	S	0		
	P	6,268		
		46,268		
Table Mtn. RNA ACEC	F	1,220	Plant community.	Limit OHV use, no woodcutting, require mining plan, no vegetative sales, prescribed fire plan, manage livestock.
	S	0		
	P	0		
		1,220		
Desert Grasslands RNA ACEC	F	530	Relict desert grasslands.	Require a mining plan, closed to OHV use, acquire State/private lands if available, prescribed fire plan.
	S	240		
	P	70		
		840		
Dry Spring RNA ACEC	F	90	Five riparian areas.	Require mining plan, prescribed fire plan, exclude livestock.
	S	0		
	P	0		
		90		

Table 2-16 (cont.)
Areas Designated as ACECs
Alternative C

Proposed Name	Federal, State & Private	Acres	Values or Hazards	Management Prescription
Muleshoe Riparian ACEC	F S P	9,156 0 770 9,926	Riparian areas, T&E species, bighorn sheep, native fish, cultural resources.	Require mining plan, rehabilitate riparian vegetation, exclude livestock, acquire legal road access, acquire private land if available, limit OHV use, close Hot Springs Canyon to OHV use, monitor water quality, develop cooperative agreements.
Bear Springs Badlands ACEC	F S P	2,007 0 0 2,007	Paleontological (fossil) resources, scenery.	Inventory fossils, VRM Class II, no road construction, limit OHV use, require a mining plan.
Guadalupe Canyon ONA ACEC	F S P	989 0 778 1,767	Riparian habitat, T&E species, scenery, recreation values.	NSO for mineral leasing, limit OHV use, no woodcutting, VRM Class II, no R/Ws, acquire private land if available, prescribed fire plan.
Bowie Mtn. Scenic ACEC	F S P	2,562 0 100 2,662	Scenic backdrop to Ft. Bowie National Historic Site.	Mineral withdrawal, NSO for mineral leasing, limit OHV use, prescribed fire plan, acquire private land if available, no woodcutting, VRM Class I, no R/Ws.
Coronado Mtn. RNA ACEC	F S P	50 0 0 50	Unique plant association.	Require mining plan, no woodcutting, VRM Class II, prescribed fire plan, no R/Ws.
Eagle Creek Bat Cave ACEC	F S P	40 0 10 50	Mexican free-tailed bat maternity cave.	Require mining plan, NSO for mineral leasing, no guano extraction, monitor the bat cave, acquire private lands if available, VRM Class II.

Table 2-16 (Cont.)
Areas Designated as ACECs
Alternative C

Proposed Name	Federal, State & Private	Acres	Values or Hazards	Management Prescription
111 Ranch RNA ACEC	F	1,728	Paleonto-logical (fossil) resources.	Require mining plan, limit OHV use, no R/Ws, no woodcutting, VRM Class II, paleon-tological clearances.
	S	0		
	P	0		
		1,728		
Peloncillo Mountains ONA ACEC	F	11,399	Cultural resources, scenery, big-horn sheep.	Require mining plan, limit OHV use, rehabilitate oak woodlands, acquire private land if available, no woodcutting, no R/Ws, prescribed fire plan, VRM Class II.
	S	0		
	P	1,129		
		12,528		

* Includes Turkey Creek Riparian ACEC from Alternative A.
Source: Safford District Files

Appendix 2 includes a detailed discussion of each ACEC nomination, including a determination of relevance and importance, rationale for designation, management prescription and alternatives considered.

Black Rock RNA ACEC, Dry Spring RNA ACEC and part of Muleshoe Riparian ACEC are in areas recommended for wilderness designation. If these areas are designated wilderness by Congress, the ACEC designation will be officially dropped since wilderness management will accomplish the same goals as the ACEC management prescription. The ACEC management prescription will be incorporated into the wilderness management plan.

2. Existing wilderness study areas (WSAs) will be managed in accordance with the *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (BLM 1987) until designated wilderness by Congress or released for other uses (see Map 33).

3. Develop Coordinated Resource Management Plans to direct the management of BLM's various multiple-use programs on public lands in the Aravaipa Creek Watershed, Muleshoe Ranch, Bear Spring Flat and Bonita Creek Watershed. The purpose of the plans is to establish management objectives that directs the development of future program activities toward maintenance and enhancement of watershed condition (see Maps 32 and 34). When developing Coordinated Resource Management Plans, livestock forage use will not be permitted to exceed an average of 40 percent over a full grazing cycle (averaging 3-5 years).

4. Revise the *San Simon River Coordinated Resource Management Plan*. The purpose of this plan is to direct development of program activities to maintain and enhance watershed condition.

5. Cooperative livestock and watershed management studies will be conducted with the Forest Service, The Nature Conservancy and universities to restore native grasslands and improve the condition of the Aravaipa Watershed. Studies will investigate various "Best Management" techniques.

Issue 3 - Off-highway Vehicles

The following actions will be implemented to resolve the Off-highway Vehicles Issue.

1. Designate the following areas "Closed" to off-highway vehicle use.

   a. Oak Grove Canyon above the Oak Grove Canyon corrals in the South Rim ACEC - 82 acres.
   b. Desert Grasslands RNA ACEC - 530 acres.
   c. Black Rock RNA ACEC - 189 acres.
   d. The riparian area of Hot Springs Canyon - 140 acres.
   e. Any area designated wilderness.

A "Closed" area is where off-highway vehicle use is prohibited, even on roads or trails that exist within the "Closed" area.

2. Designate the following areas "Limited" to off-highway vehicle use.

a. Bonita Creek ACEC - 1,572 acres.
b. Gila Box ONA ACEC - 10,062 acres.
c. South Rim ACEC - 39,918 acres.
d. Table Mountain RNA ACEC - 1,220 acres.
e. Muleshoe Riparian ACEC - 9,156 acres.
f. Bear Springs Badlands ACEC - 2,007 acres.
g. Guadalupe Canyon ONA ACEC - 989 acres.
h. Bowie Mountain Scenic ACEC - 2,562 acres.
i. 111 Ranch RNA ACEC - 1,728 acres.
j. Peloncillo Mountains ONA ACEC - 11,399 acres.

Off-highway vehicle use will be limited to existing roads and trails occurring at the time of designation and any new roads approved for construction during the life of the RMP. Existing roads and trails in these areas have been identified and are available for review in the District Office.

3. Initiate procedures to designate the remainder of the District (1,311,747 acres) "Open" to off-highway vehicle use. An "Open" area is where all types of vehicle use is permitted, at all times and anywhere in the area. Table 2-17 identifies the acres designated in each category.

4. Off-highway vehicle designations and management will apply to mountain bikes and any other forms of mechanized transportation, motorized or non-motorized.

Table 2-17
Acres Designated for Off-highway Vehicle Use
Alternative C

Off-highway Vehicle Designation	Approximate Acres
Open	1,311,747
Limited	80,613
Closed	7,640

Source: Safford District Files

Issue 4 - Riparian Areas

The following objective and actions will be implemented to resolve the Riparian Areas Issue.

The objective for management of riparian areas is to maintain or improve 75 percent of the acres of riparian vegetation in the District in good or excellent condition by 1997 (see Map 34).

The following actions will be implemented to accomplish this objective.

1. Incorporate riparian area objectives into existing and future activity plans.

2. Develop and implement a system to prioritize needed riparian area management. The priorities will be based on management objectives, resource condition, resource conflicts and the potential or capability of a riparian area to respond to treatment.

3. Develop a riparian inventory system. Coordinate development and implementation of the system with other land managing agencies.

4. Complete the inventory of all riparian areas in the District to establish baseline condition.

5. Establish a monitoring plan for selected riparian areas based upon the management priority system. Implement the plan and evaluate monitoring data. Continue to carry out needed changes in riparian area management through activity plans.

6. Continue to file for instream flow rights on perennial streams or rivers and water rights on springs and ponds to protect and maintain riparian vegetation.

7. Continue to develop grazing systems and modify existing allotment management plans, as necessary, to manage livestock use for the improvement of riparian areas.

8. Do not permit firewood cutting in riparian areas.

9. Permit the removal of non-native vegetation for improvement of riparian vegetation.

10. Maintain and monitor representative relict riparian areas to provide a baseline for future management decisions.

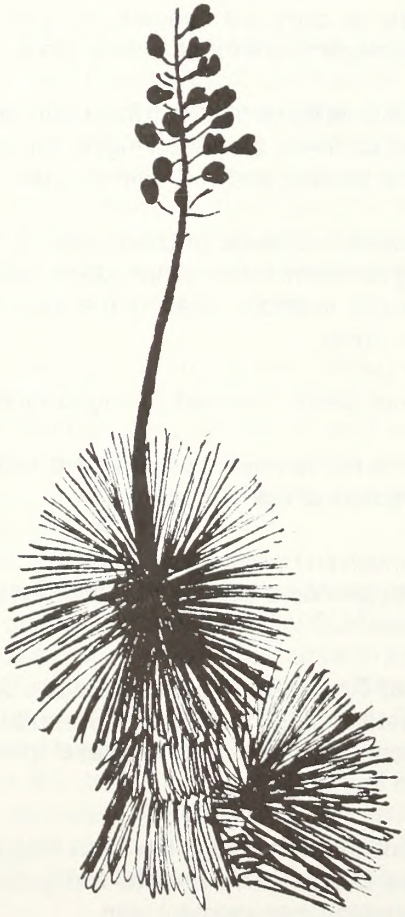
11. Build Timber Draw Dam on the San Simon River to reestablish stream channel and floodplain conditions to promote the redevelopment of the riparian ecosystem.

12. Continue to manage the San Pedro Riparian National Conservation Area following the guidance in the existing management plan.

Management Concern 1 - Wildlife Habitat

The following objectives and actions will be implemented to resolve the Wildlife Habitat Management Concern.

- Maintain and enhance priority species and their habitats.
- Focus management actions on a single special species, only when required by the Endangered Species Act. Actively promote T&E species recovery to achieve eventual delisting of the species.
- Conserve candidate species to ensure BLM authorized actions do not contribute to the need to list any species as threatened or endangered.
- Manage State listed species to meet State objectives. Other special status species will be managed in accordance with inter- and intra-agency management plans.
- Manage priority wildlife species habitat (vegetation communities) or special features of that habitat (water, riparian vegetation, cliffs, etc.) to maintain or enhance population levels.
- Focus management efforts on enhancing biological diversity.



The following actions will be implemented to accomplish these objectives.

1. Establish the following as priority species and habitats. Priority species and habitats in the District include federally listed, proposed and candidate T&E species and their habitat, State listed T&E species and their habitat and other sensitive species and their habitat.

   a. Riparian/aquatic habitat and species dependent on riparian/ aquatic habitat - Gila topminnow, desert pupfish, southern bald eagle, loach minnow, spikedace, Gila chub, Colorado roundtail chub, razorback sucker, western yellow-billed cuckoo, gray hawk, Mississippi kite, common black hawk, ferruginous pygmy-owl, willow flycatcher and leopard frog.
   b. Species identified for reintroduction in Fish and Wildlife Service plans - aplomado falcon and woundfin.
   c. Desert tortoise.
   d. Other species and habitats of interest - peregrine falcon, red bat, Sanborn's long-nosed bat, Mexican long-tongued bat, ferruginous hawk and Swainson's hawk.

   General management objectives for each of the priority species and habitats are in Appendix 6.

2. Inventory the District to determine the presence and abundance of priority species and their habitat.

3. Manage habitat for optimum wildlife populations, based on ecological conditions, taking into consideration climatic changes and the goals and objectives of AGFD and the Fish and Wildlife Service (for T&E species).

4. Transplant and augment populations of priority wildlife species, if necessary, (see No. 1 above) to reach management objectives. Prescribe management through Endangered Species Act recovery plans.

5. Monitor priority habitat to determine condition and changes in condition. Inventory the impacts of other activities on wildlife populations and habitat prior to preparation of habitat management plans (HMP). Identify opportunities in HMPs to mitigate adverse impacts and implement the actions needed to correct the problem.

6. Continue to maintain and improve wildlife habitat, with emphasis on priority habitat.

7. Protect springs and associated riparian vegetation for wildlife water, cover and forage.

8. Develop prescribed burning plans in fire dependent vegetation communities to improve habitat conditions for priority wildlife species.

9. Suppress wildfire in sensitive vegetation communities (like palo verde/saguaro) to reduce the detrimental effects on priority wildlife dependent on those communities.

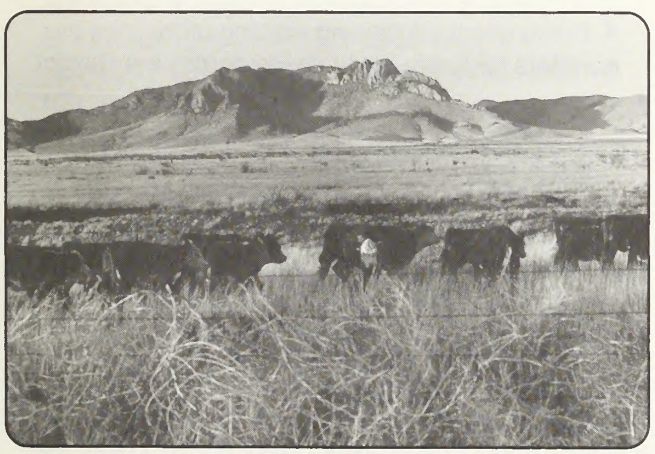
10. Close the following areas to animal control activities.

a. T&E species habitat for those techniques that pose a threat to the species.
b. Areas of concentrated recreation use for those techniques that pose a threat to the visitor.

Authorize areas that are open for animal damage control in coordination with the Animal and Plant Health Inspection Service (APHIS) on a yearly basis.

11. Inventory and categorize desert tortoise habitat by 1992. In the interim, place about 26,000 acres of public land in the San Pedro River basin from Cascabel to Winkelman and parts of the Dripping Springs and Pinal Mountains in Category 3. Place about 3,000 acres east of San Manuel in Category 2 (see Appendix 12 for goals and criteria for categorization of habitat).

12. Designate Black Rock RNA, Bonita Creek, Gila Box ONA ACEC, Muleshoe Riparian, Guadalupe Canyon ONA, Eagle Creek Bat Cave and Peloncillo Mountains ONA ACECs for the protection of priority wildlife species and their habitat.



Allotment management plans are implemented to manage livestock use on grazing allotments.

Management Concern 2 - Lands and Realty

The following objectives and actions will be implemented to resolve the Land and Realty Management Concern.

1. The following are the objectives for disposal of public lands.

- The order of preference for disposal will be by exchange, Recreation and Public Purposes (R&PP) Act or sale.
- Isolated tracts of public land may be disposed of to improve resource management efficiency and service to the public.
- When lands are disposed of next to urban areas, the resulting boundaries will be manageable, fenceable and identifiable.
- Prior to disposal, lands will be evaluated for significant cultural and natural resource values.

To accomplish these objectives, dispose of 99,670 acres of public lands in the following areas.

a. Gila Valley area.
b. El Capitan and southern Pinal Mountain area.
c. Dripping Spring Wash area.
d. Texas Canyon area.
e. Swisshelm Mountain area.
f. Douglas area.
g. Bisbee area, excluding the Juniper Flats block.
h. York Valley area.
i. Tombstone area.
j. San Simon area.
k. R&PP sanitary landfill leases.
l. Portal area.

The areas identified above are located where public lands have been identified as available for disposal. All public lands within these areas do not have to be sold or exchanged. Unforeseen future land management concerns or public demand may also necessitate the need for other public lands in retention areas to be sold or exchanged. The parcels considered at that time would be subject to BLM's planning process and the *National Environmental Policy Act*. BLM may also desire to retain certain lands within the disposal areas. Upon evaluation of future land disposals, BLM may identify resource values worthy of retention in public ownership.

Appendix 7 shows the lands that meet the FLPMA criteria for sale. Although these lands qualify for sale, BLM's preferred order of disposal is exchange, Recreation and Public Purposes Act lease/patent or sale.

2. The following are the objectives for land acquisition.

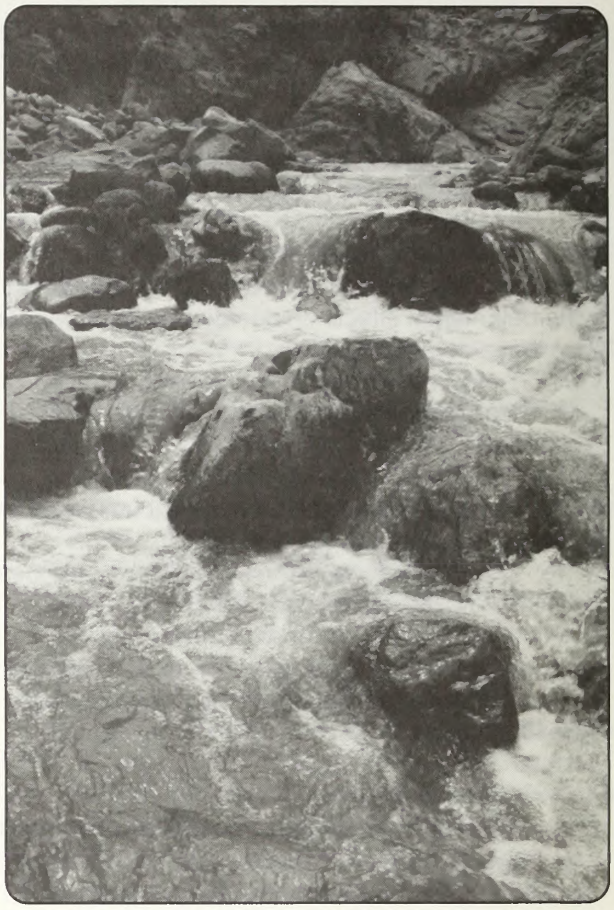
- Acquire lands with high public values that compliment existing management programs.
- Consolidate ownership pattern to improve management efficiency.
- Improve service to the public.

To accomplish these objectives, acquire 97,190 acres of State land in the following areas.

a. Spear Ranch.
b. Bryce Ranch.
c. scattered parcels in the Gila Mountains.
d. upper Turkey Creek.
e. Dripping Spring and Mescal Mountains.
f. Ash Peak.
g. upper San Francisco River.
h. west of Guadalupe Canyon.
i. Baker Canyon.
j. Juniper Flat (Mule Mountains).
k. Eagle Creek.
l. Willcox Playa.
m. Babocomari River.
n. Redfield Canyon.
o. ACECs, when the management prescription identifies the need to acquire State lands within or adjacent to the ACEC.
p. other State lands that will accomplish BLM's acquisition objectives.

Further, acquire the following types of private land, generally within or adjacent to public lands, if they become available.

a. riparian habitat.
b. watersheds of important riparian areas.
c. high value wildlife habitat, such as T&E species areas and major migration corridors.
d. administrative sites.
e. land for developed recreation sites.
f. land providing access to public lands.
g. significant cultural and paleontological properties.
h. other lands with high public resource values such as inholdings in ACECs and other types of special management areas.
i. other private lands that will accomplish BLM's acquisition objectives.



The Safford District plans to file for instream flow water rights on Hot Spring Canyon to protect its perennial flow.

3. Retain all lands, not identified for disposal, in public ownership to be managed under the principles of multiple use and sustained yield. Some lands identified for retention may be needed for future disposal. Unforeseen future land management concerns or public demand may necessitate the need for lands to be sold or exchanged. Any future disposal actions will be subject to BLM's planning process and NEPA.

4. Designate the following existing utility lines as corridors for future utility needs across the District.

a. AEPCO - 1 mile wide.
b. TEPCO - 1 mile wide.
c. Public Service Company of New Mexico - 1 mile wide.
d. All American Pipeline (San Simon Resource Area only) - 1 mile wide.
e. San Pedro - 1 mile wide (660 ft. wide where it cross San Pedro Riparian NCA).
f. Hayden/Christmas - 1 mile wide.

All future major cross-District utility rights-of-way will be routed in these corridors (see Map 35).

5. Establish the Muleshoe Ranch as a right-of-way avoidance area. Every attempt will be made to avoid this area with major cross-District rights-of-way to minimize or eliminate conflicts with sensitive resource values.

6. Attach needed site-specific environmental protection stipulations to all rights-of-way.

7. Establish the following areas as right-of-way exclusion areas.

a. Guadalupe Canyon ONA ACEC.
b. Bowie Mountain Scenic ACEC.
c. Coronado Mountain RNA ACEC.
d. 111 Ranch RNA ACEC.
e. Peloncillo Mountains ONA ACEC.
f. wilderness study areas.
g. designated wilderness.
h. Oliver Knoll Atmospheric Deposition Monitoring Station.

8. Designate Guthrie Peak, Juniper Flat in the Mule Mountains and the west end of the Dos Cabezas Mountains as communication sites (see Map 35). Site plans will be prepared for all communication sites and designation of new sites will be analyzed on a case-by-case basis.

9. Complete the withdrawal review process. Revoke all withdrawals determined to no longer serve their original or intended purpose.

10. Withdraw 12 acres for the proposed Safford District Office administrative site (T. 7 S., R. 25 E., Sec. 24, that part of the W1/2NW1/4NE1/4 lying north of Golf Course Road) from the public land laws and the mining and mineral leasing laws.

11. Withdraw 10 acres for the Oliver Knoll atmospheric deposition monitoring station (T. 4 S., R. 24 E., Sec. 22, SW1/4SE1/4SE1/4NE1/4, SE1/4SW1/4SE1/4NE1/4, NW1/4NE1/4NE1/4SE1/4, NE1/4NW1/4NE1/4SE1/4) from the public land laws and mining laws. Establish it as an administrative site.

12. Withdraw 2,411 acres, including administrative sites and campgrounds, from mineral entry to preserve important resource values. Table 2-19 identifies the areas and acreages to be withdrawn. Appendix 9 lists the legal descriptions of the areas to be withdrawn.

Rights-of-way are granted for communication sites on public lands.

Management Concern 3 - Outdoor Recreation and Visual Resource Management

The following actions will be implemented to resolve the Outdoor Recreation and Visual Resource Management Concern.

1. Designate the following areas as Special Recreation Management Areas (SRMAs) to manage current recreation use.

a. Aravaipa Canyon.
b. Bonita Creek.
c. lower Gila River from Dripping Spring to Winkelman.
d. Gila Box.
e. Hot Well Dunes.
f. lands in the San Pedro Riparian NCA not included in the *San Pedro River Riparian Management Plan* (BLM 1989).

Prepare Recreation Area Management Plans (RAMPs) for designated SRMAs, as needed. Manage the remainder of the District as an Extensive Recreation Management Area for dispersed recreation use.

2. In the RAMPs, determine which public lands will be managed for interpretation and education and which sites will be signed for interpretation and education.

3. Continue to manage Aravaipa Canyon Wilderness following the guidance of the *Aravaipa Canyon Wilderness Management Plan* (BLM 1988).

4. Prepare project plans for the following areas that need some recreation planning and development.

a. Gila Mountain Crest Trail.
b. Galiuro/Aravaipa/Santa Teresa Trail, in cooperation with the Forest Service.
c. Watson Wash Hot Well.
d. Safford-Morenci Trail.
e. Red Knolls.
f. Guadalupe Canyon.
g. Black Hills Rockhound Area.
h. Round Mountain Rockhound Area.
i. Fort Bowie/Helen's Dome Trail, in cooperation with the National Park Service.

5. Evaluate new road construction for possibilities to enhance recreation experiences.

6. Unless otherwise established, the maximum length of stay for recreation purposes in any one location is 14 days.

7. Develop a District sign plan to determine which roads, sites and facilities will be signed for interpretation, education, information and public safety.

8. Designate the following as VRM Class I areas to preserve scenic quality.

a. designated wilderness areas.
b. Bowie Mountain Scenic ACEC.

9. Designate the following as VRM Class II areas to preserve scenic quality and to provide for limited modification of the landscape.

a. Gila Box ONA ACEC.
b. Bear Springs Badlands ACEC.
c. Guadalupe Canyon ONA ACEC.
d. Eagle Creek Bat Cave ACEC.
e. Coronado Mountain.
f. 111 Ranch RNA ACEC.
g. Peloncillo Mountains ONA ACEC.
h. Babocomari River.
i. wilderness study areas (interim).

10. Designate the following as VRM Class III areas to preserve scenic quality while providing for management activities that are evident but do not dominate the landscape.

a. all major highway corridors.
b. San Francisco River above and below the Town of Clifton.
c. Dos Cabezas Peaks.
d. lands adjacent to the San Pedro Riparian NCA.
e. Peloncillo Mountains outside the ACEC.
f. Eagle Creek Canyon.
g. Gila Box outside the ACEC.
h. Gila Mountains, including Bonita Creek.
i. Mescal Mountains.
j. Gila River Canyon (below Coolidge Dam).
k. Jackson Mountain.
l. Aravaipa tablelands including the South Rim ACEC.
m. Muleshoe Ranch.

11. Designate the remainder of the District as a VRM Class IV area. Appendix 8 explains the VRM management class objectives. The following table identifies the acres designated by VRM class.

Table 2-18
Acres by Visual Resource Management Class
Alternative C

VRM Class	Acres Designated
I	11,321
II	46,771
III	402,586
IV	939,322

Source: Safford District Files

Management Concern 4 - Energy and Minerals

The following actions will be implemented to resolve the Energy and Minerals Management Concern.

1. Mining notices and plans of operation received under the surface management regulations (43 CFR 3809) will be reviewed for impacts to other resources. Mitigation and reclamation measures will be provided to prevent unnecessary or undue degradation of the environment.

2. Withdraw 2,411 acres from mineral entry to preserve important resource values. Table 2-19 identifies the areas and acreages to be withdrawn. Appendix 9 lists the legal descriptions of the areas to be withdrawn.

Table 2-19
Areas/Acres to be Withdrawn From Mineral Entry Alternative C

Area Withdrawn	Acres Withdrawn
Bowie Mountain Scenic ACEC	2,230
Fourmile Canyon Campground	159
Oliver Knoll Atmospheric Deposition Monitoring Station	10
District Office Site - proposed	12
Total	2,411

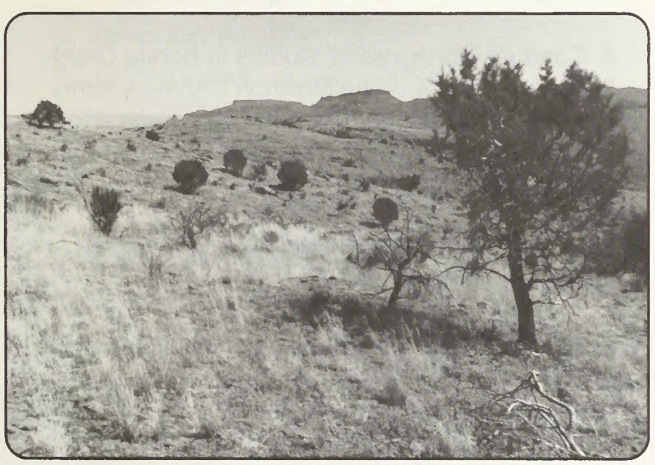
Source: Safford District Files

3. Administrative sites and campgrounds will be withdrawn from entry under the mining laws (see Appendix 9 for legal descriptions).

4. Energy and other leaseable minerals will be leased subject to the following conditions.

a. Standard environmental protection stipulations will be applied to all leases in open areas.
b. Surface occupancy will not be permitted in riparian areas (see Map 34).
c. Surface occupancy will not be permitted in campgrounds or administrative sites.
d. Surface occupancy will not be permitted in established bighorn sheep lambing areas from February 1 to April 30 of each year.
e. Surface occupancy will not be permitted at Tres Alamos, Yuma Wash or Midway Cave archaeological sites.

5. Issue mineral and energy leases with a "No Surface Occupancy" stipulation on 21,322 acres to protect sensitive resource values. Table 2-20 identifies the areas and acreages to which the NSO stipulation will apply.



The abundant grass on Sombrero Butte provides an excellent area for studies of native vegetation.

Table 2-20
Areas/Acres to be Leased With a "No Surface Occupancy" Stipulation Alternative C

NSO Area	NSO Acres
Black Rock RNA ACEC	189
Bonita Creek ACEC	2,467
Gila Box ONA ACEC	10,062
South Rim ACEC	358
Dry Spring RNA ACEC	90
Guadalupe Canyon ONA ACEC	989
Bowie Mountain Scenic ACEC	2,230
Eagle Creek Bat Cave ACEC	40
Riparian Areas - other than those located in ACECs or wilderness	4,316
Desert Bighorn Sheep Lambing Areas	90
Fourmile Canyon Campground	159
District Office Site - proposed	12
Yuma Wash Archaeological Site	120
Tres Alamos Archaeological Site	160
Midway Cave Archaeological Site	40
Total	21,322

Source: Safford District Files

6. Sale of mineral materials will not be permitted in 4,316 acres of riparian vegetation (see Map 34) throughout the District.

7. The standard list of environmental protection stipulations will be attached to all mineral material sale authorizations. Any needed site specific stipulations will also be added.

Management Concern 5 - Cultural Resources

The following objectives and actions will be implemented to resolve the Cultural Resources Management Concern.

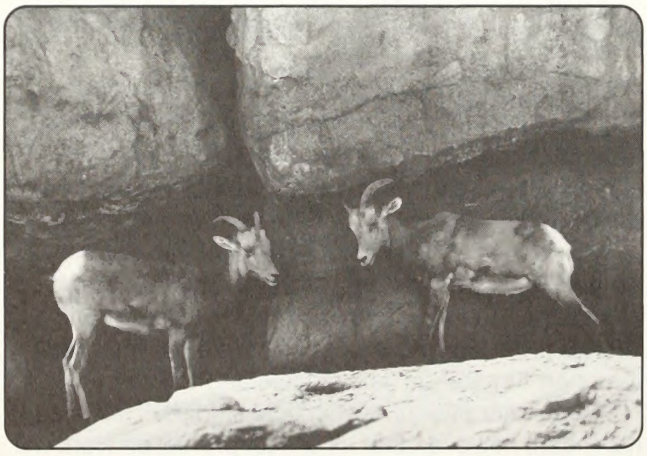
- Manage for Information Potential.
- Manage for Public Values.
- Manage for Conservation.

Table 2-21 identifies the actions that will be implemented to achieve each objective. Appendix 13 defines each objective.

To accomplish the cultural resource management objectives, the following actions will be implemented. Critical protection will be considered more important than non-threatened field studies and voluntary resource utilization or non-critical studies. This does not mean, however, that all critical protection work will be done before planning or other types of studies.

1. Prioritize implementation of planned cultural resource actions according to the degree of need as defined below:

a. First priority will be given to planned actions protecting threatened and significant cultural resources that would otherwise be lost. This includes obtaining important data from individuals (ethnographic information) that may not be available in the future.
b. Second priority will be given to collecting cultural resource field data for planning purposes and for resource utilization not part of any protection or mitigation measure (for example, to allow a cultural property to be excavated solely for scientific research pur poses or to allow a property to be interpreted to the public).
c. Third priority will be given to non-field studies designed to obtain information through archival research on cultural resources not currently having management needs or emphasis. They will, instead, be designed to produce documentation on issues relevant to current scientific questions or potential future management concern.
d. Fourth priority will be given to the preparation of management plans directing how the District manages its cultural resources.
e. Fifth priority will be given in cases where there is good reason to believe that cultural resources are being adversely impacted even though they are not located in any area of proposed activity. Planned actions in these instances will seek to determine the nature and extent of the impacts and to identify corrective management actions. Fifth priority will also be given to planned actions protecting significant threatened cultural resources where the degree of damage or threat of damage is low (non-critical).



Desert bighorn ewes inhabit the rocky cliffs of Aravaipa Canyon.

2. Use the following administrative and physical measures to protect cultural properties.

a. **Signing** - place antiquity or interpretive signs on cultural properties being looted or vandalized.
b. **Withdrawal** - withdraw areas from location under the mining laws to protect significant cultural properties. Retain significant cultural properties in public ownership to conserve them for the future.
c. **Access** - install fences or other barriers to restrict or eliminate public access to cultural properties that are being looted or vandalized. Disallow firewood cutting for public use in areas with high cultural resource values.
d. **Patrol** - patrol threatened cultural properties with personnel from the Arizona Site Steward Program, BLM's Cultural Resource Assistants and Law Enforcement Rangers and community volunteers.
e. **Fire Control** - provide input to the development of a fire management plan to protect cultural resources. Assign a Cultural Resource Advisor to all extended attack fires whenever heavy equipment is used.
f. **Stabilization** - stabilize deteriorating standing architectural structures on significant cultural properties.
g. **Detailed Recording** - record all known prehistoric cliff dwellings and related structures in the District and the Yuma Wash and Midway Cave sites.
h. **Public Education** - develop and implement annual Public Affairs Action Plans for cultural resources.

3. Expand and complete a Class III cultural resource inventory and intensive testing in and adjacent to the Timber Draw project area.

4. Conduct ethnographic studies in Bonita Creek, Muleshoe Ranch, Pima Mormon Canal System, Civilian Conservation Corps (CCC) camps and project areas, Aravaipa Canyon Wilderness and adjacent lands and Dos Cabezas Mountains area.

5. Revise the Safford District Rock Art Cultural Resource Management Plan.

6. Conduct Class II archaeological inventories in Aravaipa Canyon Wilderness and adjacent lands, Muleshoe Ranch, Pima Mormon Canal System, CCC camps and project areas, Dos Cabezas Mountains historic sites and culturally sensitive riparian areas bordering the San Simon Valley to enhance our knowledge of cultural resources for future management decisions.

7. Conduct a Class III archaeological inventory in Bonita Creek Canyon to enhance our knowledge of cultural resources for future management decisions.

8. Conduct extensive archival research to increase knowledge of the Dos Cabezas historical mining area on public lands. Develop cooperative management agreements for the inventory of the mining area on adjacent non-federal lands.

9. Conduct archival research to identify historic trails, roads, telegraph lines and other forms of historic transportation and communication.

10. Develop a regional research design to help identify the specific scientific and public values of individual cultural properties.

11. Actively promote and fund scientific investigations on District cultural resources through the development of information packets, brochures and other measures.

12. Develop a rigorous predictive model for the occurrence of cultural resources.

13. Develop a comprehensive interpretive and educational program depicting the geological, cultural and wildlife values of Aravaipa Canyon, Bonita Creek, Muleshoe Ranch and Gila Box.

14. Interpret Turkey Creek cliff dwelling, the CCC Base Camp near the Safford Airport, selected cultural properties along Bonita Creek and the Dos Cabezas mining properties for public use.

Table 2-21
Management Objectives Achieved by Planned Actions
Alternative C

Actions	Manage for Information Potential	Manage for Public Values	Manage for Conservation
1. Use implementation priority criteria	N/A	N/A	N/A
2. Use protection measures	X	X	X
3. Expand inventory and testing of Timber Draw	X		
4. Conduct ethnographic studies -			
Bonita Creek	X	O	O
Muleshoe Ranch	X	O	O
Mormon Canals	X	O	O
CCC camps & projects	X	O	O
Aravaipa area	X	O	O
Dos Cabezas area	X	O	O
5. Revise Rock Art CRMP	X	O	O
6. Conduct Class II inventories -			
Aravaipa area	X	O	O
Muleshoe Ranch	X	O	O
Mormon Canals	X	O	O
CCC camps and projects	X	O	O
Dos Cabezas historic sites	X	O	O
San Simon riparian areas	X	O	O
7. Conduct Class III inventory -			
Bonita Creek	X	O	O
8. Conduct extensive inventory and manage Dos Cabezas Mining Area	X	O	O
9. Research trails, roads, etc.	X	O	
10. Develop regional research design	X		

Table 2-21 (cont.)
Management Objectives Achieved by Planned Actions
Alternative C

Actions	Manage for Information Potential	Manage for Public Values	Manage for Conservation
11. Promote and fund scientific use	X		
12. Develop predictive model	X		
13. Interpret -			
Aravaipa area	X		
Bonita Creek	X		
Muleshoe Ranch	X		
Gila Box	X		
14. Interpret -			
Turkey Creek Cliff Dwellings	X		
Safford Airport CCC Camp	X		
Bonita Creek properties	X		
Dos Cabezas mining properties	X		

X - Primary Objective O - Secondary Objective N/A - Not Applicable
Source: Safford District files.

Management Concern 6 - Soil Erosion

The following objectives and actions will be implemented to resolve the Soil Erosion Management Concern.

- Reduce accelerated erosion.
- Restore eroded floodplains of the San Simon River and in the Bear Springs Flat area (see Map 34).
- Reduce silt and salts entering the Gila River from the San Simon River.

The following actions will be implemented to accomplish the soil erosion and salinity management objectives.

1. Develop activity plans, where needed, to initiate rehabilitation of eroded areas and to provide more forage for livestock.

2. Construct Timber Draw Dam to continue efforts to rehabilitate eroded areas of the San Simon River (see Map 34).

3. Continue reseeding grasses and riparian vegetation on restored areas behind erosion control structures. Manage livestock with fencing or other methods to protect these areas.

4. Protect the eroded floodplain of the San Simon River through appropriate livestock management.

5. Repair Oso Largo Detention Dam (see Map 34) in the Bear Springs Flat area to continue rehabilitation of eroded lands. Assess the land upstream of Oso Largo Dam to determine the need for maintenance of existing structures or the need for additional structures. Make all structures functional without adverse impacts to the ACEC located in the upper end of the eroded area.

6. Investigate methods to increase livestock forage in the Bear Springs Flat area, without adverse impacts to the ACEC located in the uppper end of the eroded area.

7. Continue seasonal livestock use in the Bear Springs Flat area.

8. Cap or contain the flow of flowing wells in the San Simon Watershed if salinity exceeds 3,000 ppm.

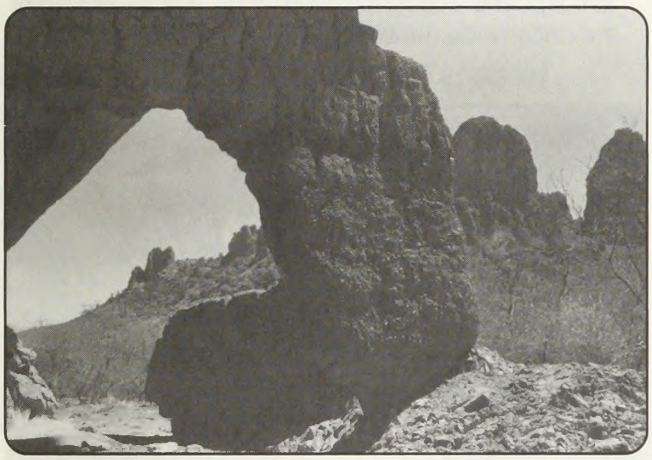
Management Concern 7 - Vegetation

The following objectives and actions will be implemented to resolve the Vegetation Management Concern.

1. The objective for management of upland vegetation is to restore and maintain plant communities for wildlife, watershed condition and livestock. The desired plant communities will be determined in the preparation of activity plans

(allotment management plans, habitat management plans, etc.). An ecological site inventory will be completed as allotment management plans are prepared or existing plans revised.

2. The objective for management of threatened, endangered and special status plant species is to manage the public lands to preserve occurrences of special status species and to achieve the eventual delisting of threatened and endangered species. To accomplish these objectives, continue inventories in areas of proposed activities.



Examples of prehistoric Salado adobe structures can be found on public lands in the Safford District

3. Land treatments (vegetation manipulation), will be used to decrease invading woody plants and increase grasses and forbs for wildlife, watershed condition and livestock. Public lands, where vegetation condition is less than desired to meet management objectives, will be identified for treatment through activity plans. Treatments may include various artificial (mechanical, chemical or prescribed fire) methods. Management objectives for riparian vegetation can be found under Issue 4 - Riparian Vegetation.

4. Make the following firewood cutting areas available to the public.

a. San Simon Fan Structure area - for tamarisk and mesquite.
b. West of the San Simon River, on Sonoita soils - for mesquite.
c. Mesquite Well area, on Sonoita soils - for whitethorn and mesquite.
d. Horse Mountain area - for manzanita, juniper and mesquite.

Permit up to 500 cords per year Districtwide, but do not allow cutting in major desert washes.

5. Determine other areas appropriate for firewood cutting and the quantities available.

6. Issue permits for vegetative products, other than firewood, as determined by public demand and on-site evaluation.

Management Concern 8 - Water Resources

The following objectives and actions will be implemented to resolve the Water Resources Management Concern.

1. The objective for management of groundwater is to efficiently use available water for on-going resource management purposes.

The following actions will be implemented to accomplish the groundwater management objective.

a. Cap unusable or unsuitable wells to prevent contamination of acquifers and to contain highly saline water.
b. Inspect and maintain water systems to prevent unnecessary loss of water.

Further, initiate a groundwater study for the San Simon Watershed to determine the level of the various aquifers, changes in the level of the aquifers, the water quality of the aquifers and availability of groundwater for BLM's resource management programs. Prepare a management plan for use of water.

2. The objective for management of water quality is to maintain or enhance water quality at, or above, established standards for designated uses to meet management goals for each water source. BLM will adhere to federal and State water quality laws and standards.

The following actions will be implemented to accomplish the water quality management objective.

a. Support other resource programs in the implementation of this plan and monitor the effectiveness of planning decisions.
b. Continue the existing water quality testing program in the District (see Appendix 11).
c. Initiate data collection where there is a suspected or known pollution threat or hazard to water quality.

d. Develop an activity plan and initiate management actions needed to mitigate water quality degradation detected through water quality monitoring.
e. Develop a District Water Quality Monitoring Plan.
f. Share data with other water quality managing agencies.

3. Manage stream segments nominated or designated as Unique Waters to maintain or enhance water quality standards and protect the associated resources.

4. Evaluate the long-term Districtwide resource management needs for ground and surface water.

5. Evaluate the Gila River, Redfield Canyon, Hot Springs Canyon, Bass Canyon and Bonita Creek to determine the quantities of instream flow (water right) needed to meet resource management objectives. File on the quantities needed to meet those objectives.

6. Evaluate Turkey Creek, Deer Creek, Left Fork of Markham Creek and Guadalupe Canyon (intermittent streams), if their flow becomes perennial, to determine the quantities of instream flow (water right) needed to meet resource management objectives. File on the quantities needed to meet resource management objectives.

7. Consider purchasing water rights when resource values are threatened.

Management Concern 9 - Air Quality

The following objectives and actions will be implemented to resolve the Air Quality Management Concern.

- Continue to manage the airshed in accordance with State of Arizona Class II standards, unless re-designated. Class II standards allow for moderate deterioration of air quality associated with moderate, well-controlled industrial and population growth.

- Comply with all federal and State statutes pertaining to air quality and cooperate with the State of Arizona in carrying out the State Implementation Plan.

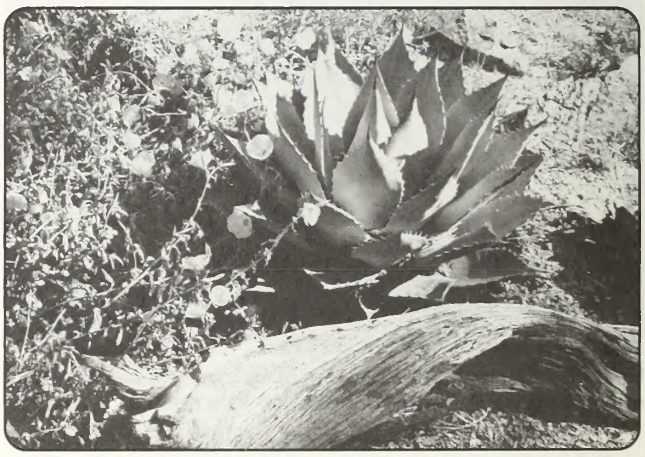
The following actions will be implemented to accomplish these objectives.

1. When implementing BLM or BLM-approved activities, minimize surface disturbances to prevent the addition of large quantities of dust to the air. When surface disturbances occur, require appropriate stipulations to mitigate the impact to air quality.

2. Continue the rehabilitation of erosion in the San Simon Watershed and the Bear Springs Flat area (see Map 34) to reduce airborne dust.

3. Conduct prescribed fire with prior approval of the Arizona Bureau of Air Quality Control.

4. Continue operation of the Oliver Knoll atmospheric deposition monitoring station as part of the nationwide network.



Agaves were an important food of Native Americans, who cultivated it using dryland farming techniques near Safford.

Management Concern 10 - Paleontological Resources

The following objectives and actions will be implemented to resolve the Paleontological Resources Management Concern.

- Preserve a representative sample of Class I paleontological localities.
- Ensure that BLM actions avoid inadvertent damage to paleontological resources.
- Manage paleontological resources to preserve their scientific and interpretive values.

The following action will be implemented to accomplish these objectives.

1. Continue inventories in areas of proposed activities to identify the presence of paleontological resources and determine measures needed to mitigate anticipated impacts.

Alternative D (No Action)

This alternative continues implementation of the current land use plans. The allocation of lands and resources would remain unchanged. The analysis of the impacts of implementing *Alternative D* provides a basis for comparing the effects of the other three alternatives.

Issue 1 - Access

The following action will be implemented to resolve the Access Issue.

1. Develop a plan to determine physical and legal access needs in the District. Close roads determined to be unnecessary.

Issue 2 - ACECs and Other Types of Special Management

The following actions will be implemented to resolve the ACECs and Other Types of Special Management Issue.

1. Consider the following areas for ACEC designation or other types of special management.

   a. Coronado Mountain.
   b. Bear Spring Paleontological Area.
   c. Little Doubtful Canyon.
   d. Howell Canyon.
   e. Gila River, below Coolidge Dam.
   f. Turkey Creek.
   g. Dos Cabezas Peaks.
   h. Mescal Creek.
   i. riparian areas.
   j. Government Peak.
   k. springs.

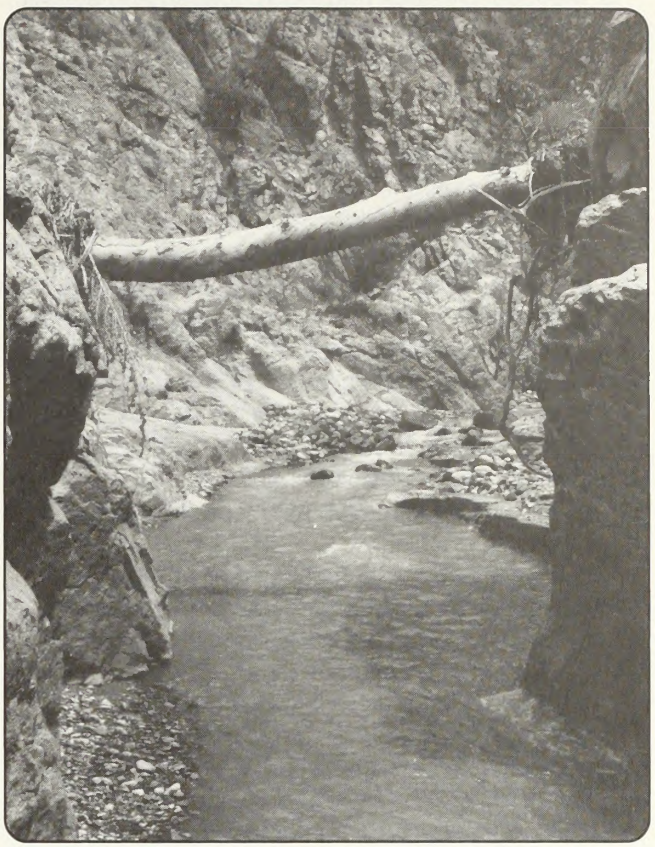
2. Manage the following areas to maintain the primitive character, scenic quality, recreation opportunities and research potential.

   a. Peloncillo Mountains.
   b. Bowie Mountain.
   c. Bonita Creek.
   d. Dos Cabezas Mountains.
   e. Jackson Mountain.
   f. Eagle Creek.

3. Determine the preliminary suitability of the Gila and San Francisco Rivers, through the Gila Box, for inclusion in the National Wild and Scenic Rivers System.

Issue 3 - Off-highway Vehicles

The following actions will be implented to resolve the Off-highway Vehicles Issue.



The Narrows, located in Hot Springs Canyon in the Muleshoe Ranch, is subject to flash flooding.

1. Manage off-highway vehicle (OHV) use on lands under wilderness review according to the Interim Management Policy and Guidelines for Lands Under Wilderness Review to preserve the wilderness values of these areas.

2. Designate the remainder of the District "Limited" to existing roads and trails.

3. Inventory and analyze the District to determine possible locations for "Open" OHV areas.

Issue 4 - Riparian Areas

The following actions will be implemented to resolve the Riparian Areas Issue.

1. Manage desert washes to minimize soil erosion, maintain or increase vegetation ground cover, maintain or improve wildlife habitat and protect cultural values.

2. Suppress wildfires with as little surface disturbance as possible with the following limitations.

   a. Prohibit use of heavy equipment in riparian and aquatic habitat along the Gila and San Franciso Rivers, except as a last resort.
   b. Keep surface disturbance to an absolute minimum in the remainder of the Gila Box.

3. Manage livestock grazing in riparian and aquatic habitat in the Gila Box. Allow only periodic prescribed use for vegetative control and management.

4. Enhance riparian habitat in the Geromino Planning Unit by the following prescription.

a. Eliminate or manage livestock grazing.
b. Intensively inventory fish, raptors and song birds.
c. Eliminate vehicular travel from all or part of the riparian areas or seasonally restrict travel based upon information collected in the riparian inventory.
d. Prohibit unnatural destruction or removal of vegetation unless it benefits wildlife.
e. Prohibit construction of any project that disrupts wildlife.
f. Prohibit any high intensity human use.
g. Retain all public lands.
h. Classify all or part of the riparian areas as Outstanding Natural Areas.

Management Concern 1 - Wildlife Habitat

The following actions will be implemented to resolve the Wildlife Habitat Management Concern.

1. Provide additional permanent and/or seasonal water developments for wildlife and livestock. Make access to water available to wildlife yearlong in accordance with wildlife and livestock activity plans.

2. Contract or develop cooperative agreement with range users to provide water for wildlife at wells, springs and pipelines when livestock are not on the range or pasture.

3. Provide artificial quail and javelina cover, artificial raptor nests, big game water developments and study the feasibility of waterfowl habitat development projects.

4. Conduct intensive wildlife inventory and analysis in cooperation with the Arizona Game and Fish Department (AGFD). Give full consideration to nongame species and special attention to threatened and endangered species.

5. Manage livestock to minimize competition with wildlife and to enhance wildlife habitat where feasible.

6. Vegetation manipulation will be coordinated with the wildlife program to determine and mitigate impacts to wildlife and their habitat.

The Bear Srpings Badlands contain many fossilized bones and tracks of prehistoric animals.

7. Protect, enhance and establish vegetative cover at water sources.

8. Erosion control structures should include specific design features to provide better habitat for wildlife and fish.

9. Use prescribed fire to improve wildlife habitat. Keep bulldozer work to a minimum to reduce impacts to wildlife habitat and minimize additional access to the area.

10. Conduct an inventory, in cooperation with the AGFD, to determine the feasibility of reintroducing or supplementing big game populations.

11. Focus management in upper elevations to protect and enhance wildlife habitat.

12. Develop a grazing management program that more closely meets the needs of desert bighorn sheep in cooperation with the State and local grazing lessees.

13. Monitor the distribution and numbers of native and non-native fish in the Aravaipa watershed and prevent non-native fish from becoming established.

14. Establish at least one 100-acre range and wildlife study exclosure in each of the major standard habitats.

15. Conduct a comprehensive terrestrial and aquatic inventory, using the Integrated Habitat Inventory Classification System (IHICS). Evaluate the potential for endangered fish reintroductions and ACEC recommendations.

16. Study ephemeral rangelands to determine the relationship between livestock forage use and wildlife densities and diversities.

17. Manage riparian areas to protect their values.

18. Prevent tamarisk from establishing itself in Mescal Creek and Aravaipa Canyon Wilderness.

19. Coordinate with FWS, AGFD, The Nature Conservancy and local landowners to acquire protective easements for selected parts of the San Pedro River to protect this diverse and highly productive riparian area.

20. Coordinate with the San Carlos Apache Tribe to eliminate livestock from 18 miles of riparian habitat on the Gila River below Coolidge Dam. If this is not feasible, construct small exclosures on public lands with the highest potential for rehabilitation of riparian vegetation. Rehabilitate the riparian community by removal of tamarisk and planting cottonwoods and willows.

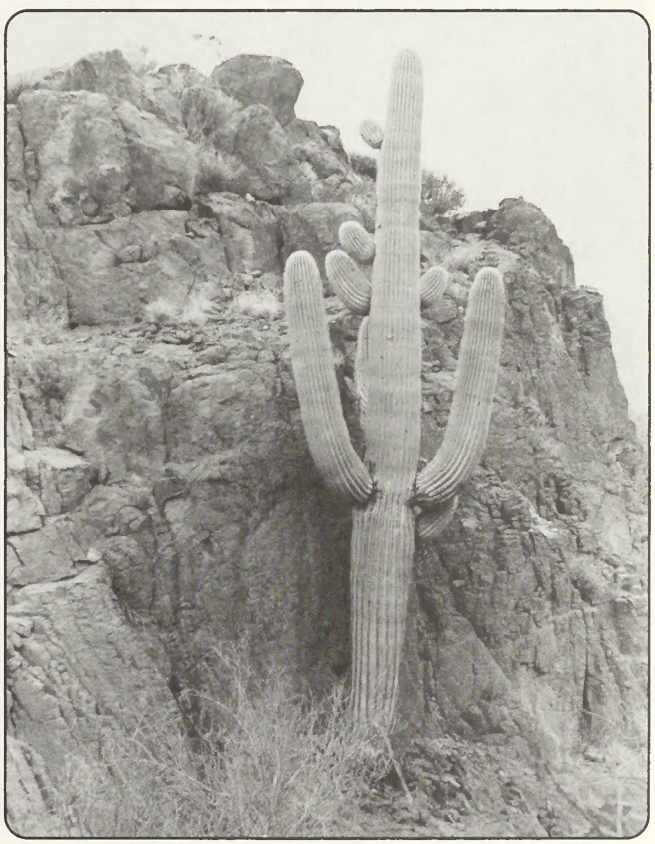
21. Acquire baseline terrestrial and aquatic biological data on the condition and trend of all riparian habitat and perennial streams.

22. Prohibit the removal of all native live and dead trees greater than 6 inches diameter at breast height (DBH) in the Winkelman Planning Unit. Potential firewood cutting areas will be evaluated to determine impact on wildlife.

23. Study white-tailed deer and elk distribution and habitat use.

24. Study the potential for introduction of beaver into Aravaipa Creek and the river otter into the Gila River below Coolidge Dam.

25. Predator control activities, other than sport hunting, should be permitted only in areas where there is documented evidence of extreme depredation of livestock. Aim control measures only at offending animals.



Saguaros are found along canyons in the foothills of the Gila Mountains northwest of Safford.

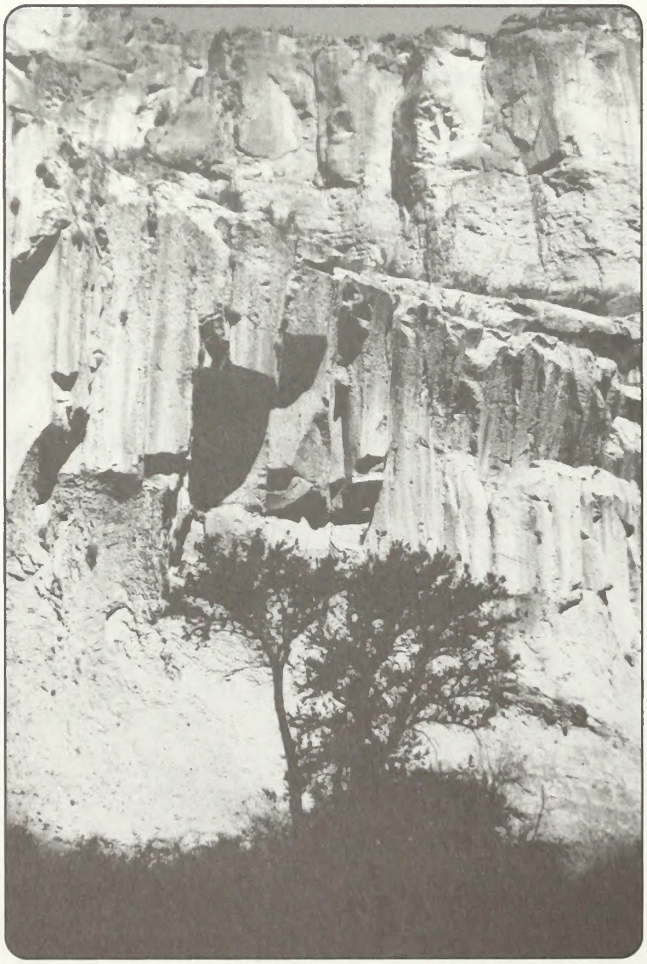
26. Coordinate with the AGFD to establish predator concentration areas, habitat preferences and population trends.

27. During nesting season, prohibit activities within 1/4 mile radius of active raptor nests in wooded areas and 1/2 mile radius in open country unless consideration has been given to minimizing disturbance to nesting raptors. Manage raptors to enhance nesting success.

28. Assist the FWS and AGFD by monitoring the Gila River for use by wintering bald eagles to determine the extent and period of use.

29. Determine the distribution, population status and habitat relationships of the desert tortoise and Gila monster.

30. Restrict OHVs to existing roads, except in designated areas currently receiving regular use where no wildlife conflicts exist. Areas designated for unrestricted use should exclude major washes, riparian zones, forest, chaparral and saguaro-palo verde habitats.



A lone tree is siloutted against the sheer canyon walls of Aravaipa Canyon Wilderness.

Management Concern 2 - Lands and Realty

The following actions will be implemented to resolve the Lands and Realty Management Concern.

1. Consider public land disposal proposals in the following use priority: to assure public access; for other public purposes (such as R&PPs); exchanges that benefit BLM programs; and Bureau motion sales.

2. Disposal of lands in urban, suburban, residential, commercial and industrial expansion areas will be made on the merit of the application, as it would benefit BLM programs or be of benefit to the public for public purposes.

3. Provide 80 acres of public land in T. 8 S., R. 16 E., Sec. 24, E1/2NE1/4 for the future expansion of the Town of Mammoth.

4. Provide 20 acres of public land in the Dripping Spring Valley in T.4S., R. 16 E., for disposal to Gila County for a sanitary landfill.

5. Provide 40 acres of public land in T. 8 S., R. 17 E., Sec.19, NE1/4SW1/4 for disposal to Pinal County for use as a medical health building.

6. Retain isolated tracts of public lands in the Bowie-San Simon area, that have agricultural potential, until adequate information is obtained concerning the effect new wells will have on the groundwater table.

7. Conduct a feasibility study of, and implement accordingly, a land exchange and acquisition program to provide better control of range administration and improve management practices.

8. Acquire State and private lands in the following areas.

a. Dos Cabezas Mountains.
b. Bailey Well.
c. San Simon Stage Station.
d. Bowie Mountain marble quarry.
e. Salt Well.
f. Chaney Place.
g. Bonita Creek.
h. Jackson Mountain.
i. Eagle Creek.

9. Acquire 680 acres of private land along Aravaipa Creek, east and west of the wilderness.

10. Retain public lands in the following areas.

a. Dos Cabezas Mountains.
b. Gila Box.
c. Jackson Mountain.
d. small tracts of public lands adjacent to the Gila River.
e. the National Guard Withdrawal, in T. 7 S., R. 25 E., Sec. 23, S1/2NE1/4, SE1/4, Sec. 26, NE1/4.
f. T. 8 S., R. 17 E., Sec. 29 for the future recreation and public purposes in the next 10 years.
g. all lands in the Winkelman Planning Unit that have perennial water or riparian habitat.

11. Grant rights-of-way to public and private utility interests in established or proposed alternate primary corridors. Secondary or distribution line rights-of-way will be considered on a case-by-case basis.

12. Consider the existing concentration of rights-of-way through the Dripping Spring, Gila and San Pedro Valleys a right-of-way corridor. Confine all future rights-of-way to this corridor.

13. Develop site plans for all existing and future communication site developments prior to granting additional rights-of-way.

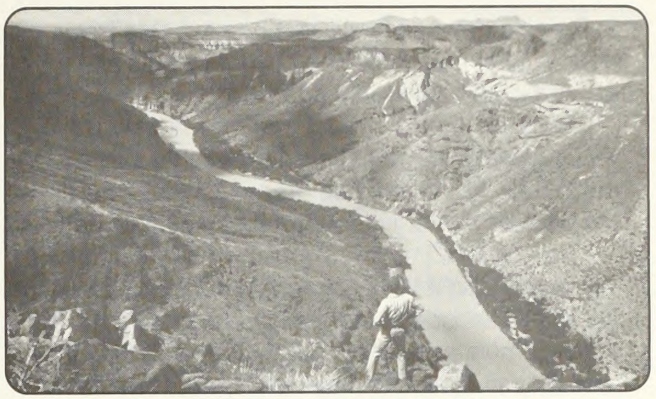
14. Following completion of the withdrawal review, authorize the following withdrawals along the Gila River below Coolidge Dam, by cooperative agreements with the withdrawing agency.

a. San Carlos Indian Irrigation Project.
b. Power Site Reserve 150.
c. Power Site Reserve 590 and Secretarial Order - Water Power Designation 4.

15. Complete the U.S. Geological Survey revocation request for Power Project AR-730, Water Power Designation 5, and Power Site Reserve 602 included in Power Site Restoration A-760, located along the Gila River below Coolidge Dam. Close the land included in these revocations to all appropriations when the withdrawals are revoked.

Management Concern 3 - Outdoor Recreation and Visual Resource Management

The following actions will be implemented to resolve the Outdoor Recreation and Visual Resource Management Concern.



The 1000-foot cliffs above the Gila River afford spectacular views of the rugged Gila Box.

1. Retain existent scenic qualities on lands along Interstate 10, U.S. Highways 666 and 70, the Apache Pass Road and around Ft. Bowie National Historic Site. Exclude activities, where possible, that detract from open space values.

2. Review project proposals to determine their impact on scenic values. Prescribe needed mitigation measures.

3. Conduct a thorough inventory and evaluation of geologic features and develop a plan for interpretation and/or management of those determined to be of value for outdoor recreation opportunities.

4. Prepare activity plans to consider type and location of recreation facilities, needed for visitors, to accommodate and enhance recreation experiences while providing control and minimal impact on other activities.

5. Review new road construction proposals to determine the impacts on primitive values and opportunities for providing wayside stops, scenic overlooks, turnouts, interpretive signs, etc.

6. Conduct a thorough inventory to determine the location of unique ecological communities. Develop activity plans to provide for the management and interpretation of these areas.

7. Develop an activity plan for private lands adjacent to each end of Aravaipa Canyon Wilderness that may be acquired in the future.

8. Develop a comprehensive interpretive and education program depicting the biological, cultural and geological values of the Aravaipa Canyon area.

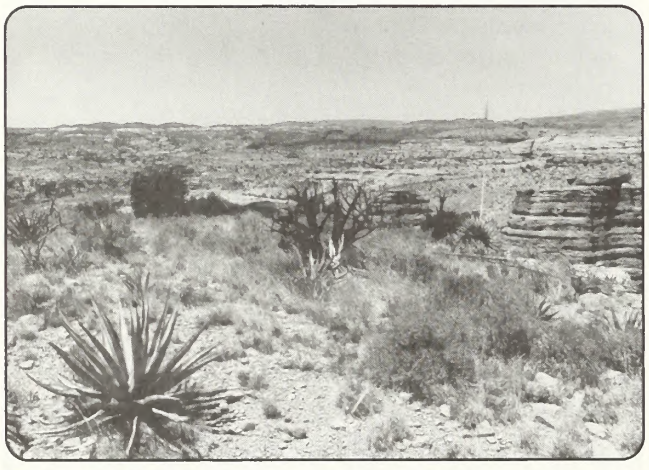
9. Provide day use facilities along the Gila River near Winkelman, including a single picnic site about 1 mile below Coolidge Dam.

10. Inventory all VRM Class I areas that fall outside the WSAs. Manage those areas identified as Class I to provide primarily for natural ecological changes.

11. Manage VRM Class II areas. Changes in any of the basic landscape elements caused by a management activity should not be evident in the landscape. Contrasts may be seen but should not attract attention.

12. Manage VRM Class III areas. Management activities that cause changes to the basic landscape elements may create contrasts that are evident and begin to attract attention but the changes should remain subordinate to the existing landscape.

13. Manage VRM Class IV areas. Contrasts in the landscape, caused by management activities, may attract attention and be a dominant feature in terms of scale but the contrast should repeat the basic landscape elements.



The tops of the Pilares are inaccessable to livestock, providing an excellent opportunity to study native plants.

Management Concern 4 - Energy and Minerals

The following actions will be implemented to resolve the Energy and Minerals Management Concern.

1. Continue to make public lands available to mineral entry.

2. Allow common material (sand and gravel) sales in material pits to be established as needed. Refer applicants first to commercial sources.

3. Allow free use of common material sites, as needed, by public agencies. Inventory existing sites to determine management compatibility and suitability for continued use.

4. Withdraw the Gila Box from all forms of appropriation, including mineral entry under the mining laws and material sales acts. Permit mineral leasing. Issue mineral leases with the following restrictions.

   a. Lease only those minerals that do not require surface excavation for exploration or development (oil, gas or geothermal resources).
   b. Prohibit leasing in riparian and aquatic habitat and needed buf fer areas, pending studies to determine the feasibility and effects of leasing activities.
   c. Prohibit surface occupancy in riparian and aquatic habitat and the buffer areas except as may be determined allowable by an environmental assessment.

5. Withdraw the Black Hills Rockhound Area, Round Mountain Rockhound Area and Eagle Creek Canyon from all forms of appropriation, including mineral entry under the mining law, but allow mineral leasing.

6. Withdraw 40 acres containing the Eagle Creek Bat Cave from all forms of appropriation, including the mining and mineral leasing laws.

7. Give management emphasis to mineral development in the following areas.

   a. zeolite deposits in the San Simon Valley.
   b. Gila Mountains north of Safford and Ft. Thomas.
   c. Black Rock.
   d. the Gila River between Bonita Creek and Spring Canyon.

8. Lease geothermal resources with environmental stipulations to protect other resource values.

9. Keep the lands adjacent to the Gila River in the Safford Valley open to mineral entry.

10. Review all lands closed to mineral entry and determine withdrawals that should be revoked.

11. Provide 640 acres for the future expansion of Christmas Mine.

Management Concern 5 - Cultural Resources

The following objectives and actions will be implemented to resolve the Cultural Resources Management Concern.

- Manage for Information Potential.
- Manage for Public Values.
- Manage for Conservation.

Table 2-22 identifies the actions that will be implemented to achieve each objective. Appendix 13 defines each objective.

1. Conduct an intensive archaeological site inventory and analysis on the public lands to determine location of sites and management needs.

2. Direct archaeological site inventory emphasis to areas subject to disturbance or which are endangered by a specific action.

3. Thoroughly inventory for and evaluate archaeological sites and develop a plan for their interpretation, restoration and protection.

4. Consider protective withdrawals as a viable means to attain protection of highly significant archaeological sites from disturbing actions, when other protective alternatives are inadequate.

5. Provide interim and long-term protection of selected cultural resources threatened by agents of deterioration.

6. Implement the Safford District Cultural Resources Patrol Plan and initiate a public information and education campaign.

7. Conduct studies to identify and evaluate socio-cultural values held by the public and to locate and evaluate cultural resource properties and areas possessing socio-cultural values.

8. Allocate a select sample of cultural resources to Management Use. Prepare a cultural resource management plan on these properties. Plan and implement studies to determine the effects of other programs and uses on cultural resources.

9. Evaluate the effectiveness and efficiency of cultural resource protection measures.

10. Allocate select cultural resource sites and areas to scientific use and initiate studies directed at filling the primary cultural resource data gaps.

11. Develop an interpretive program on the San Simon Restoration Project.

Table 2-22
Management Objectives Achieved by Planned Actions
Alternative D

Actions	Manage for Information Potential	Manage for Public Values	Manage for Conservation
1. Inventory District	X	O	O
2. Inventory proposed projects	X		
3. Manage cultural resources	X	O	O
4. Protect through withdrawal	O	O	X
5. Protect selected cultural resources	X	X	X
6. Patrol sites and educate the public	X	X	X
7. Identify public values	O	X	
8. Conduct impact studies of selected cultural resources	X		
9. Evaluate existing protection measures	X	O	O
10. Conduct studies to fill data gaps	X		

X - Primary Objective O - Secondary Objective
Source: Safford District Files

Management Concern 6 - Soil Erosion

The following actions will be implemented to resolve the Soil Erosion Management Concern.

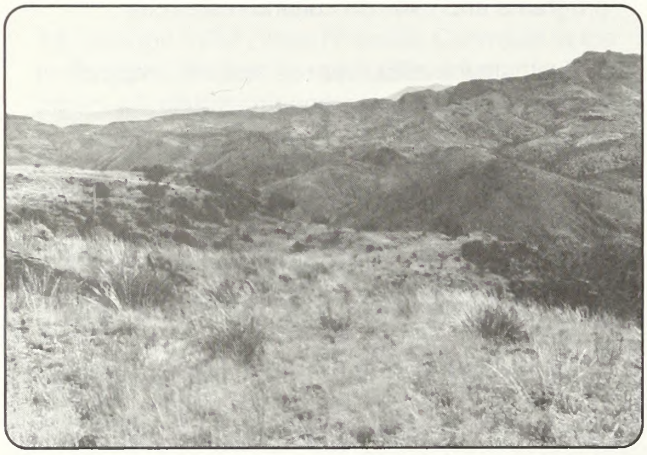
1. Provide for watershed protection by establishing grazing systems that meet vegetation needs and ensure sufficient ground cover to protect the soil surface from erosion.

2. Provide prompt wildfire control.

3. Construct water control structures to provide additional erosion control.

4. Conduct land treatments to increase vegetative cover and reduce soil erosion.

5. Limit watershed practices, in the upper elevations of the Gila Mountains north of Pima, to check dams and other small water control structures.



A thick cover of native grasses grows atop Sombrero Butte east of Mammoth.

Management Concern 7 - Vegetation

The following actions will be implemented to resolve the Vegetation Management Concern.

1. Permit removal or sale of vegetative products as a salvage measure on project areas or other areas where surface disturbance is imminent.

2. Consider applications for vegetative products (jojoba nuts, cactus fruits) on a case-by-case basis.

3. Authorize firewood cutting in cases of emergency energy shortage or other extreme situations requiring special use considerations.

4. Review and make needed revisions to all existing allotment management plans. Develop AMPs and grazing systems, consistent with BLM's allotment categorization and management policy, for the remainder of the allotments.

5. Protect and improve vegetative cover at watering sites to improve or provide habitat (cover), protect cultural resources, decrease erosion, increase forage and protect T&E species.

6. Use land treatment practices to increase forage production and improve range condition.

7. Use vegetation manipulation treatments to increase forage production and improve range condition in the Bear Springs Flat and Ashurst area primarily through application of applicable vegetative manipulation treatments. Apply treatments only on suitable sites likely to respond.

8. Use prescribed fire to increase grass production.

9. Use water control and watershed treatment practices to increase vegetation.

10. Control cockleburs by maintenance spraying.

11. Manage livestock to increase forage production and improve range condition in the Gila Mountains and at Black Rock.

12. Reactivate plant material studies, concentrating on suitable species for watershed rehabilitation and wildlife and recreation needs.

13. Prohibit harvest of ponderosa pine on public lands.

Management Concern 8 - Water Resources

The following actions will be implemented to resolve the Water Resources Management Concern.

1. Inventory water resources in the Dos Cabezas Mountains to obtain additional information for management of wildlife, particularly T&E species.

2. Manage the Bonita Creek area primarily for water yield and quality.

3. Intensively manage livestock in Bonita Creek to protect vegetation cover, maintain water quality, reduce run-off and increase water percolation for storage to allow for continued discharge flow during dry periods.

4. Sample Aravaipa Creek weekly for bacterial analysis during peak recreation use. When pollution exceeds established standards for Primary Contact Water, notify the public of the problem so they can decide whether they want to use the area.

5. Enforce State and federal water quality standards for mining operations, in coordination with the State.

6. Collect water quality data at specific locations in response to management concerns.

Management Concern 9 - Air Quality

No management actions will be implemented.

Management Concern 10 - Paleontological Resources

The following actions will be implemented to resolve the Paleontological Resources Management Concern.

1. Prohibit any proposal that would disturb any object of antiquity or affect the integrity of lands in the 111 Ranch Paleontological Area. Retain lands in public ownership at least until the significance of the area has been evaluated by professionals.

2. Inventory and evaluate geologic features and develop a plan for the interpretation and management of those features of interest to the public. Give particular attention to paleontological sites in the "breaks" and eroded slopes of Bear Springs Badlands.

3. Develop a sensitivity map of fossil-bearing geologic formations in the District.

Table 2-23
Summary of Environmental Effects

Action	Alternative A (Proposed Action)	Alternative B	Alternative C	Alternative D (No Action)
		WATER		
1. ACEC management	Low benefits to water quality and quantity by management of 5 ACECs on 42,278 acres.	Low benefits to water quality and quantity by management of 6 ACECs on 169,159 acres.	Low benefits to water quality and quantity by management of 5 ACECs on 69,556 acres.	No significant effects.
2. Restrictions on mining and mineral material sales	Low benefits due to lower water sedimentation on the 95,939 acres with restrictions.	Moderate benefits to water quality from mining restrictions on 200,849 acres.	No significant effect.	No significant effects.
3. OHV designations	Low benefits to water quality from OHV restrictions on 1,398,292 acres by reducing sediment in water.	Low benefits to water quality from OHV restrictions on 1,400,000 acres by reducing sediment in water.	Low impacts to water quality from increased sedimentation due to OHV use on 1,311,747 acres.	Low benefits to water quality by restricting OHV use to existing roads and trails District-wide.
		SOIL		
1. Construction and/or repair of detention dams	Moderate benefit. Save 500 ac. feet of soil per year.	Moderate benefit. Save 500 ac. feet of soil per year.	Moderate benefit. Save 500 ac. feet of soil per year.	Moderate benefit. Save 300 ac. feet of soil per year.
2. OHV designations	Designition of 1,388,366 acres as "limited" and 9,926 acres as "closed" - low benefits. 1,708 acres "open" - low impacts.	Restrictions to OHVs on 1,400,000 acres would give a low benefit to soil by reducing soil disturbance and erosion.	80,613 acres as "limited" and 7,640 acres as "closed" would give low benefits by reducing soil erosion caused by vehicles.	Restrictions to OHVs on 1,400,000 acres would provide a low benefit to soil by reducing disturbance and erosion.
		RIPARIAN VEGETATION		
1. ACEC management	High benefits on 1,500 acres and 40 miles of riparian vegetation in 6 ACECs.	High benefits to 4,000 acres of riparian vegetation due to management of 7 ACECs and wild and scenic rivers.	Moderate benefits to 460 acres of riparian areas in 7 ACECs.	Moderate benefits on 60 riparian areas covering 1,267 acres.

Table 2-23 (cont.)
Summary of Environmental Effects

Action	Alternative A (Proposed Action)	Alternative B	Alternative C	Alternative D (No Action)
		RIPARIAN VEGETATION (cont.)		
2. OHV designations	Low benefits from limiting vehicle disturbance.	Restrictions on OHV use would provide low benefits by minimizing vegetation disturbance.	Designation of most of the District as "open" would cause moderate impacts to 35 riparian areas that would be used by OHVs.	Designation of most of the District as "limited" would give low benefits to riparian areas that would be used by OHVs.
3. Disposal and acquisition of lands	Disposal of less than 25 acres - low impact. Acquisition of other riparian areas - moderate benefit.	Acquisition of riparian vegetation - moderate benefit.	Acquisition of riparian vegetation - moderate benefit.	Acquisition of riparian vegetation - low benefit.
4. Acquisition of instream flow rights and other water rights	Moderate benefits to 5 riparian areas on 350 acres.	Moderate benefit by assuring continual necessary flow to riparian areas.	Moderate benefit by assuring continual necessary flow to riparian areas.	No action.
5. Restrictions on mineral leasing	Low benefits to 4,458 acres of riparian habitat through NSO stipulations.	Low benefits to 3,797 acres of riparian habitat through NSO stipulations.	Low benefits to 4,316 acres of riparian habitat through NSO stipulations.	Low benefits to 274 acres of riparian habitat through NSO stipulations and mineral withdrawal.
		UPLAND VEGETATION		
1. Prescibed land treatments	Low benefits from seedings, prescribed fire, etc.	Low abenefits from seedings, prescribed fire, etc.	Low abenefits from seedings, prescribed fire, etc.	Low abenefits from seedings, prescribed fire, etc.
2. ACEC management	No significant effect.	Low benefits from management of 3 ACECs (144,154 acres) by increasing vegetation density and diversity.	No significant effect.	No significant effect.
3. OHV designations	"Limited" or "closed" OHV designation on 1,398,292 acres would provide low benefits by protecting vegetation from vehicular disturbance.	"Limited" or "closed" OHV designation on 1,400,000 acres would provide low benefits by protecting vegetation from vehicular disturbance.	Designation of 1,311,747 acres as "open" would create low impacts from vehicular disturbance.	"Limited" or "closed" OHV designation on 1,400,000 acres would provide low benefits by protecting vegetation from vehicular disturbance.
		WILDLIFE HABITAT		
1. ACEC management	Management of 63,307 acres in 10 areas would give moderate benefits for wildlife by protecting unique habitats and riparian ecosystems. Management of 6,470 acres in 4 areas would give low benefits by protecting necessary habitat.	Management of 101,739 acres in 9 areas would moderately benefit wildlife habitat by protecting and enhancing habitat.	Management of 81,594 acres in 15 areas would give moderate benefits to wildlife habitat by protecting and improving habitat.	Designation of riparian areas as ACECs would provide moderate benefits to wildlife by protecting riparian habitat. Management of Gila River and Mescal Creek would give moderate benefits to 17 priority species.

Table 2-23 (cont.)
Summary of Environmental Effects

Action	Alternative A (Proposed Action)	Alternative B (No Action)	Alternative C	Alternative D
		WILDLIFE HABITAT (cont.)		
2. OHV designations	Closure of bighorn sheep lambing areas would give high benefits to bighorn sheep. "Limited" and "closed" areas would give high benefits to 17 priority wildlife species and their habitat.	Closure of bighorn sheep lambing areas would give high benefits to bighorn sheep by reducing human harassment during critical periods. "Limited" and "closed" areas would give high benefits to 36 priority species and their habitat.	"Open" OHV areas would moderately impact wildlife habitat.	"Limited" and "closed" areas would give high benefits to wildlife habitat.
3. Disposal and acquisition of lands	Acquisitions would provide high benefits by acquiring wildlife habitat.	Disposal actions would provide low impacts to wildlife by loss of habitat. Acquisitions would give high benefits by acquiring wildlife habitat.	Disposal of lands in 9 locations provides low impacts due to loss of habitat. Acquisitions would give high benefits by acquiring wildlife habitat.	Acquisitions would give high benefits by acquiring wildlife habitat.
4. Restrictions on mining and mineral material sales	Withdrawal of 29,104 acres from mineral entry, NSO stipulationson 33,323 acres, and no mineral materials sales on 33,512 acres would give high benefits to wildlife by protecting their habitat.	Withdrawal of 37,056 acres from mineral entry would highly benefit wildlife habitat. No mineral material sales on 116,707 acres would moderately benefit 17 species. Mineral leasing withdrawals (1,134 acres) have low benefits. NSO stipulations (49,952 acres) have moderate benefits for 15 species.	Withdrawal of 2,411 acres from mineral entry, NSO stipulations on 21,322 acres and no mineral materials sales on 4,316 acres would give low benefits to 11 priority species by protecting their habitat.	No significant effect.
5. Acquisition of instream flow rights and other water rights	Moderate benefit by providing continued water on 5 streams, giving protection to 15 priority species.	Moderate benefits for 17 species by increased water quality protection.	Acquisition of instream flow water rights on 5 perennial streams and 4 intermittent streams would give low benefits to 3 priority species.	Management of Bonita Creek for Safford's water supply would moderately benefit wildlife by ensuring continued water supply.

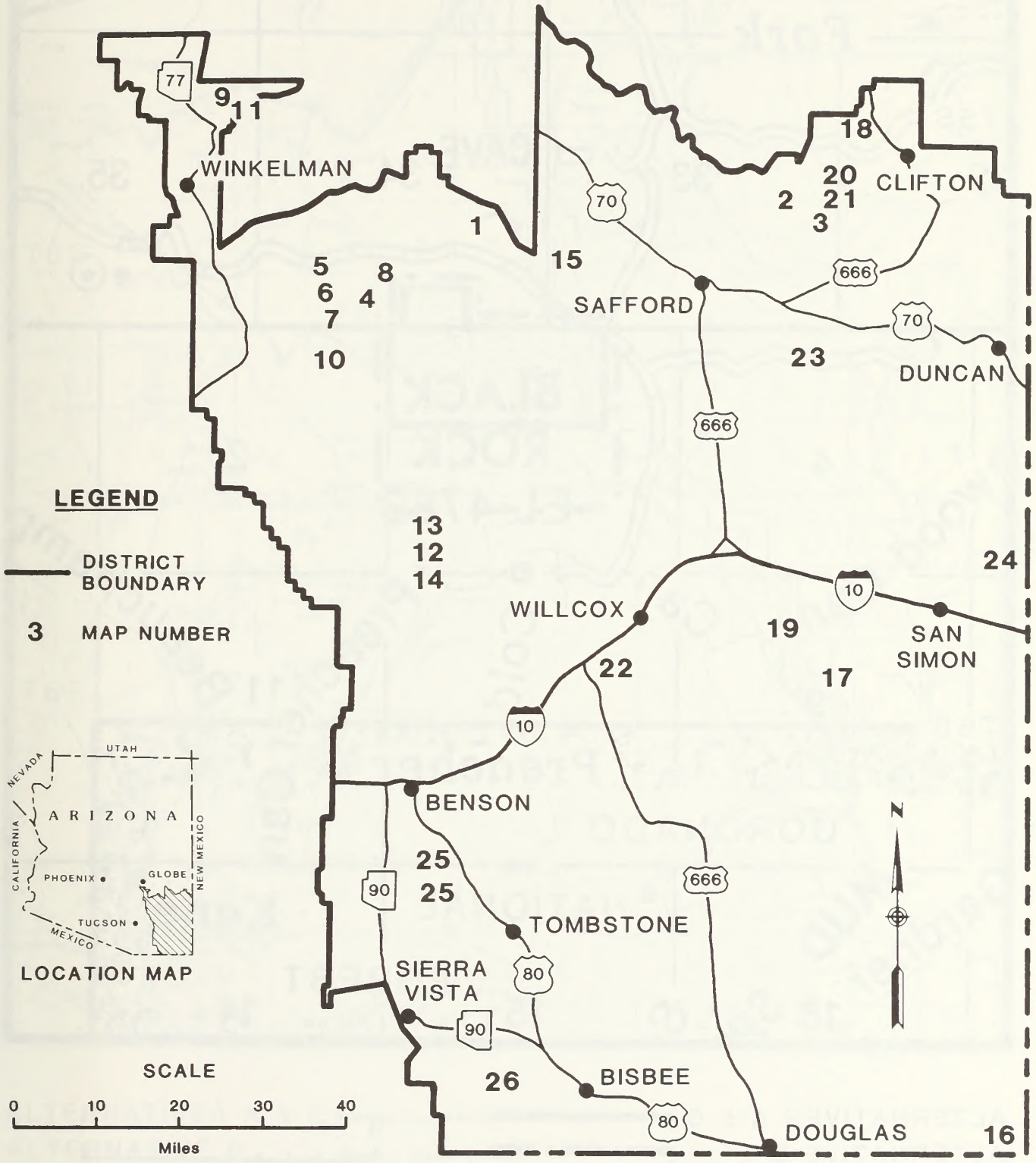
Table 2-23 (cont.)
Summary of Environmental Effects

Action	Alternative A (Proposed Action)	Alternative B	Alternative C	Alternative D (No Action)
		CULTURAL/PALEONTOLOGICAL RESOURCES		
1. Restrictions on mining and mineral material sales	Restrictions on 111 Ranch and Bear Springs Badlands (5,935 acres) would provide high benefits to paleontological resources by protecting them from disturbance.	Restrictions on 111 Ranch and Bear Springs Badlands (7,128 acres) would provide high benefits to paleontological resources by protecting them from disturbance. Moderate benefits to cultural resources from mining and material sales restrictions on other areas.	NSO stipulations would provide low benefits to three archaeological sites totaling 320 acres.	Withdrawal from mineral entry and NSO stipulations would moderately benefit cultural resources.
2. ACEC management	ACEC management on 7 ACECs for 59,916 acres would provide moderate benefits by protective actions.	ACEC management on 8 ACECs for 175,462 acres would provide moderate benefits by protective actions.	ACEC management on 7 ACECs for 85,722 acres would provide moderate benefits by protective actions.	Designating riparian areas as ACECs would have moderate benefits to cultural resources by protecting the condition of these areas.
3. OHV designations	Closure of 3 ACECs to vehicular use would moderately benefit cultural resources by preventing damage associated with vehicular use.	Closure of 5 ACECs to vehicular use would moderately benefit cultural resources by preventing damage associated with vehicular use.	Designation of 1,311,747 acres as "open" would give moderate impacts to cultural resources by increasing damage by vehicles.	Designation of 1,393,301 acres as "limited" to OHVs would provide moderate benefits by protecting cultural resources from damage by vehicular use.
4. Construction and/or repair of detention dams	High impacts to 37 archaeological sites on 1,300 acres.	High impacts to 37 archaeological sites on 1,300 acres.	High impacts to 37 archaeological sites on 1,300 acres.	High impacts to 37 archaeological sites on 1,300 acres.
		SOCIO-ECONOMIC		
1. Restrictions on mining and mineral material sales	Mineral withdrawals on 41,123 acres, NSO stipulations on 33,323 acres and no mineral material sales on 33,512 acres would have a low economic impact by precluding mineral exploration.	Mineral withdrawals on 81,451 acres, NSO stipulations on 45,952 acres, no mineral material sales on 116,707 acres and withdrawals from mineral leasing on 45,529 acres would have a low impact on the economy.	Withdrawal of 2,411 acres from mineral entry, NSO stipulations on 21,322 acres and no mineral materials sales on 4,316 acres would have a low impact to the economy.	Withdrawal from mineral entry would have a low impact on the economy.
2. ACEC management	Low benefits to the local economy due to increased primitive recreation use.	Low benefits to the local economy due to increased primitive recreation use.	Low impacts to local economy by decreased primitive recreation use.	Low benefits to the local economy due to increased primitive recreation use.
3. OHV designations	No significant effect.	No significant effect.	Low benefit to the local economy that provides goods and services to OHV enthusiasts.	No significant impact.
4. Disposal of lands	Low impacts to the economy from loss of PILT payments.	Low impacts to the economy from loss of PILT payments.	Low impacts to the economy from loss of PILT payments.	No significant effect.

Source: Safford District Files.

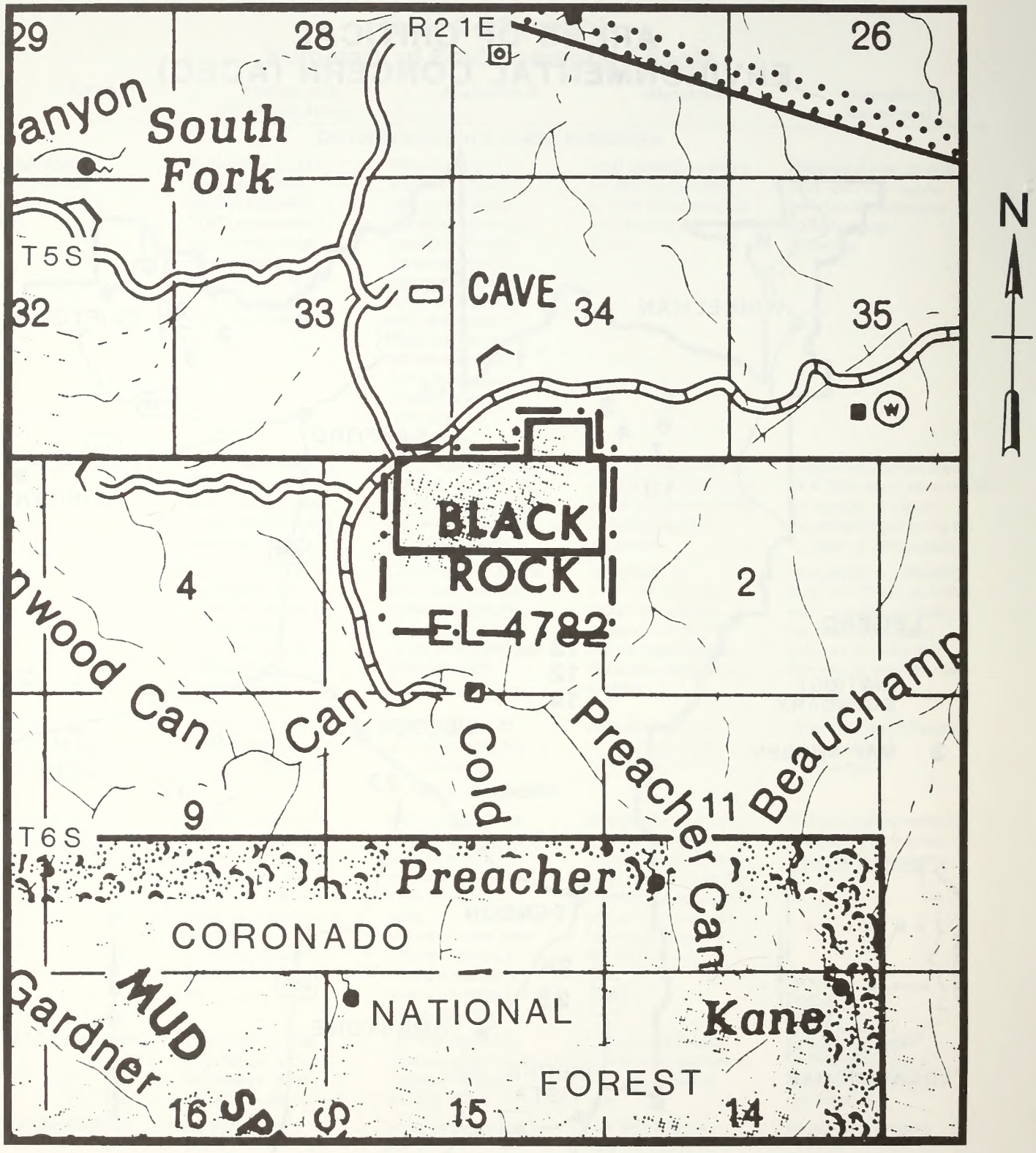
INDEX TO MAPS SHOWING

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)



BLACK ROCK RNA ACEC

MAP 1



ALTERNATIVES A & C

ALTERNATIVE B

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SCALE IN MILES

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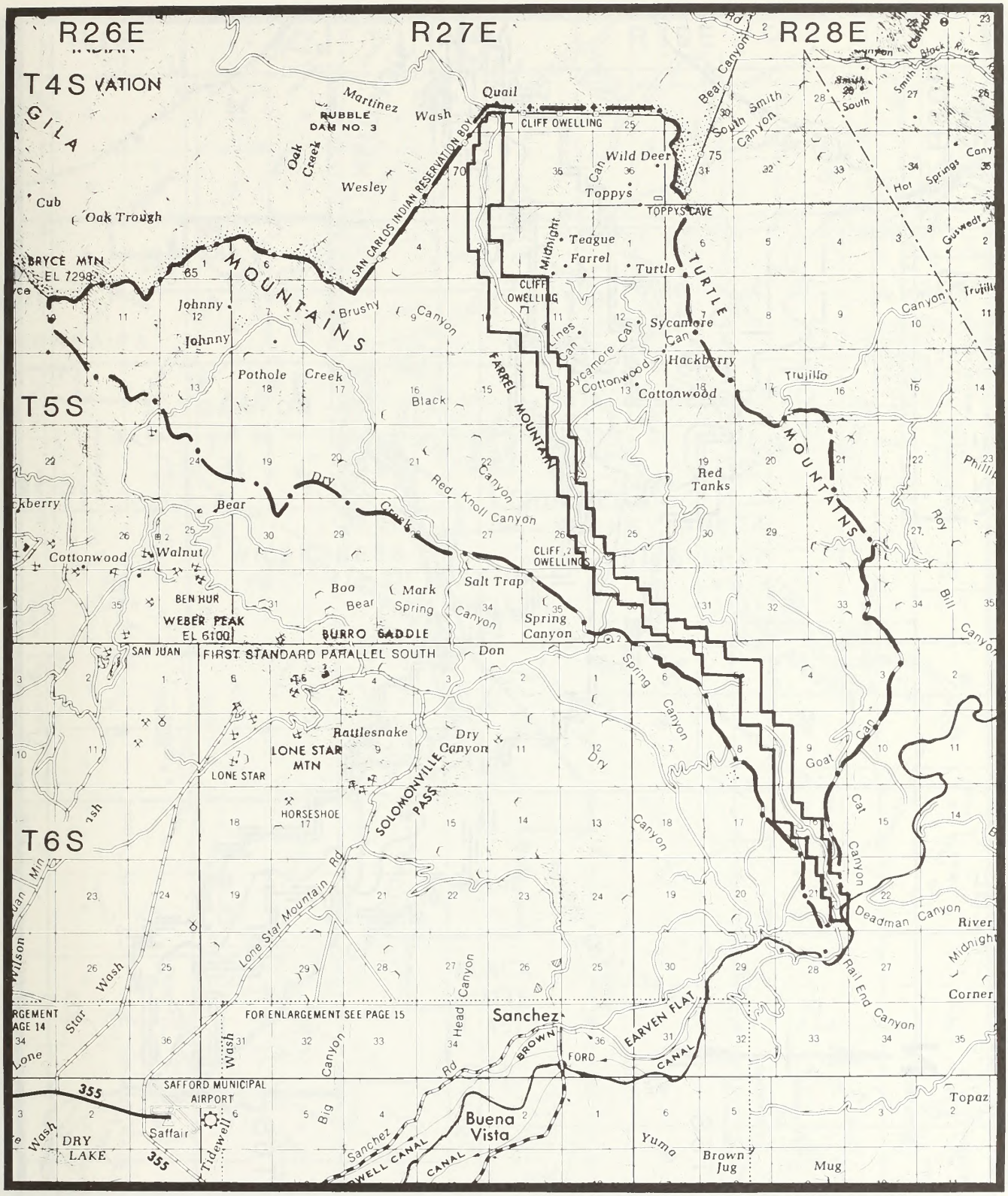
BONITA CREEK ACEC

MAP 2



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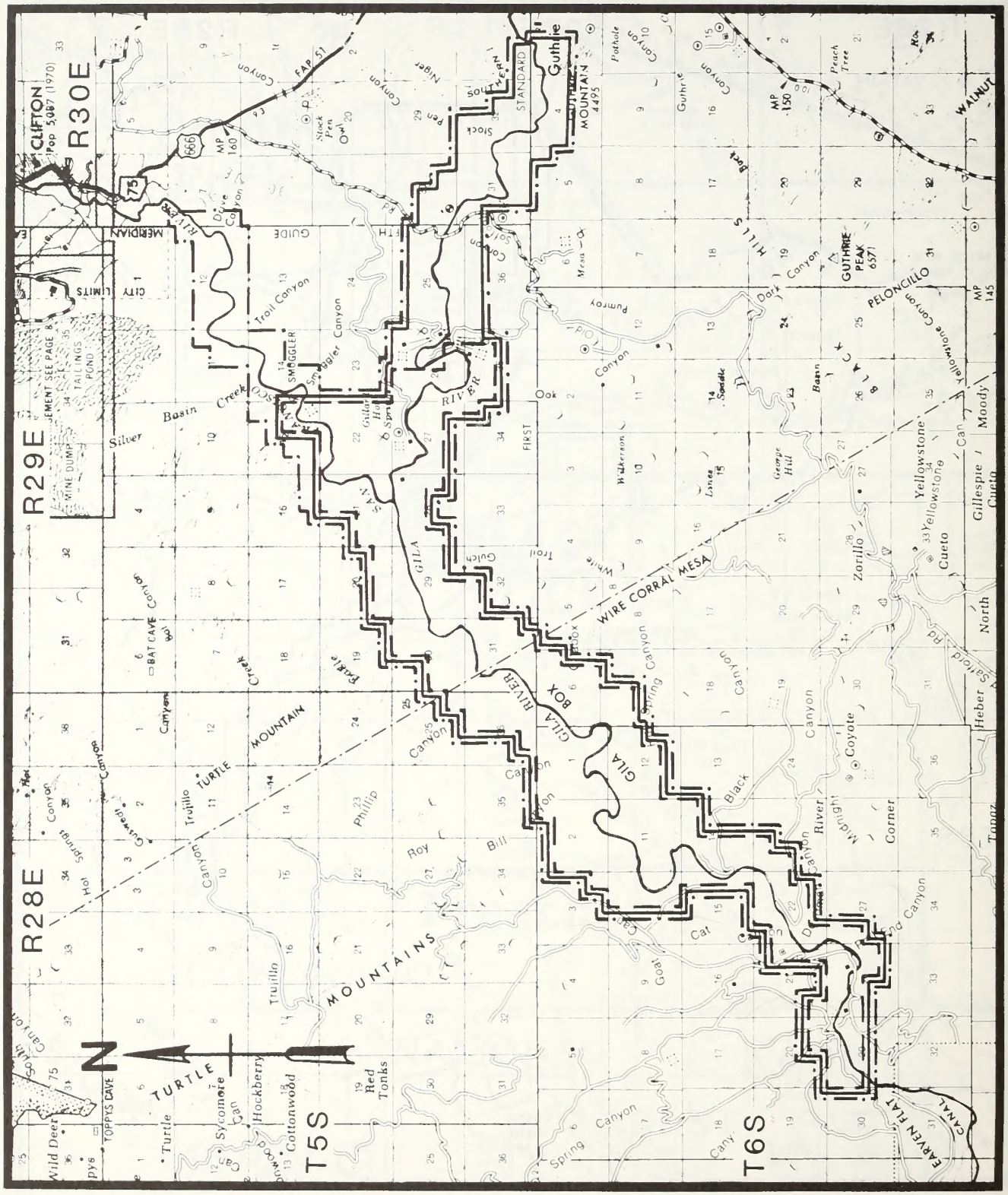
GILA BOX ONA ACEC

MAP 3



ALTERNATIVE A

ALTERNATIVE B

ALTERNATIVE C

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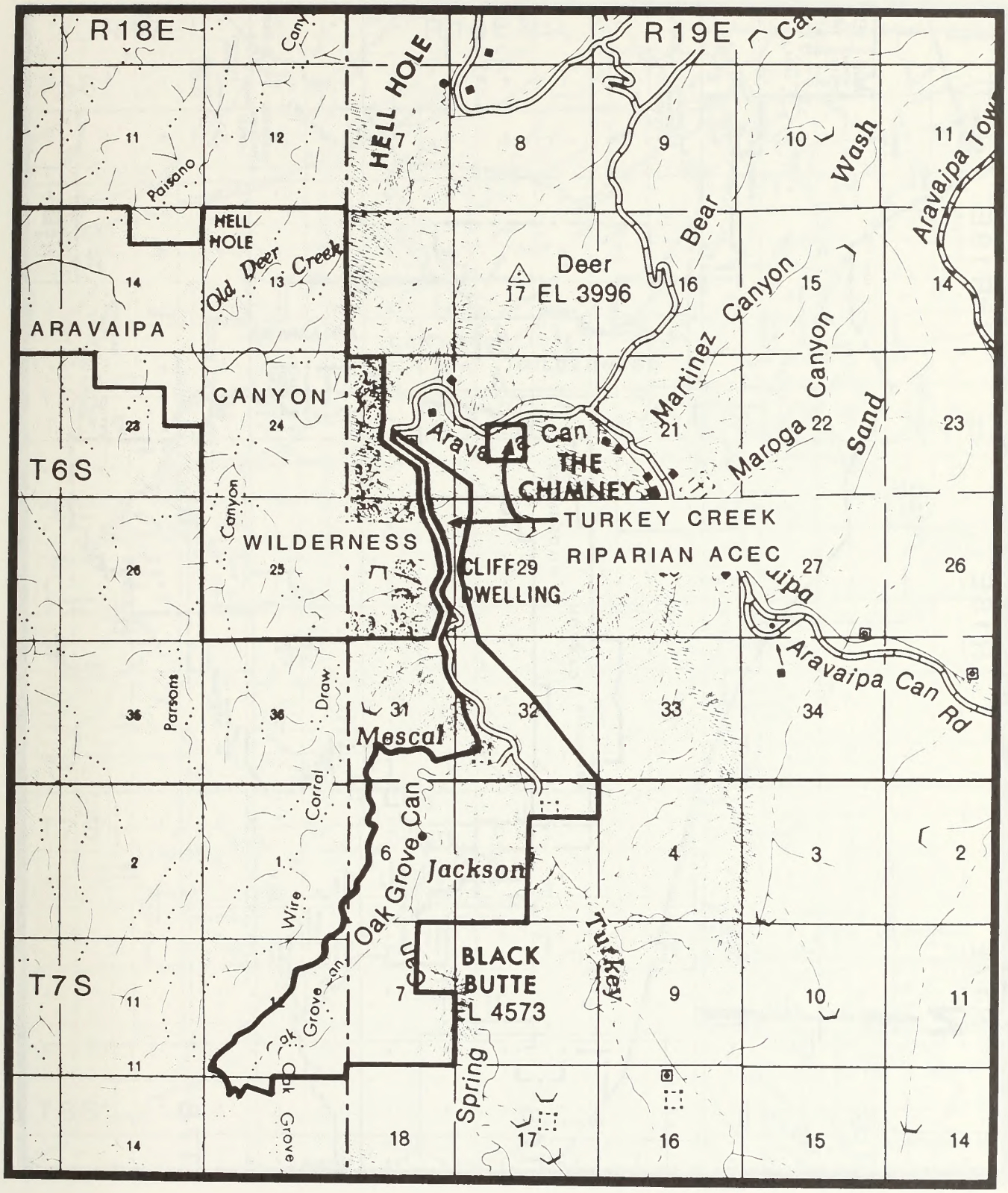
TURKEY CREEK RIPARIAN ACEC

MAP 4



ALTERNATIVE A ——————

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SCALE IN MILES

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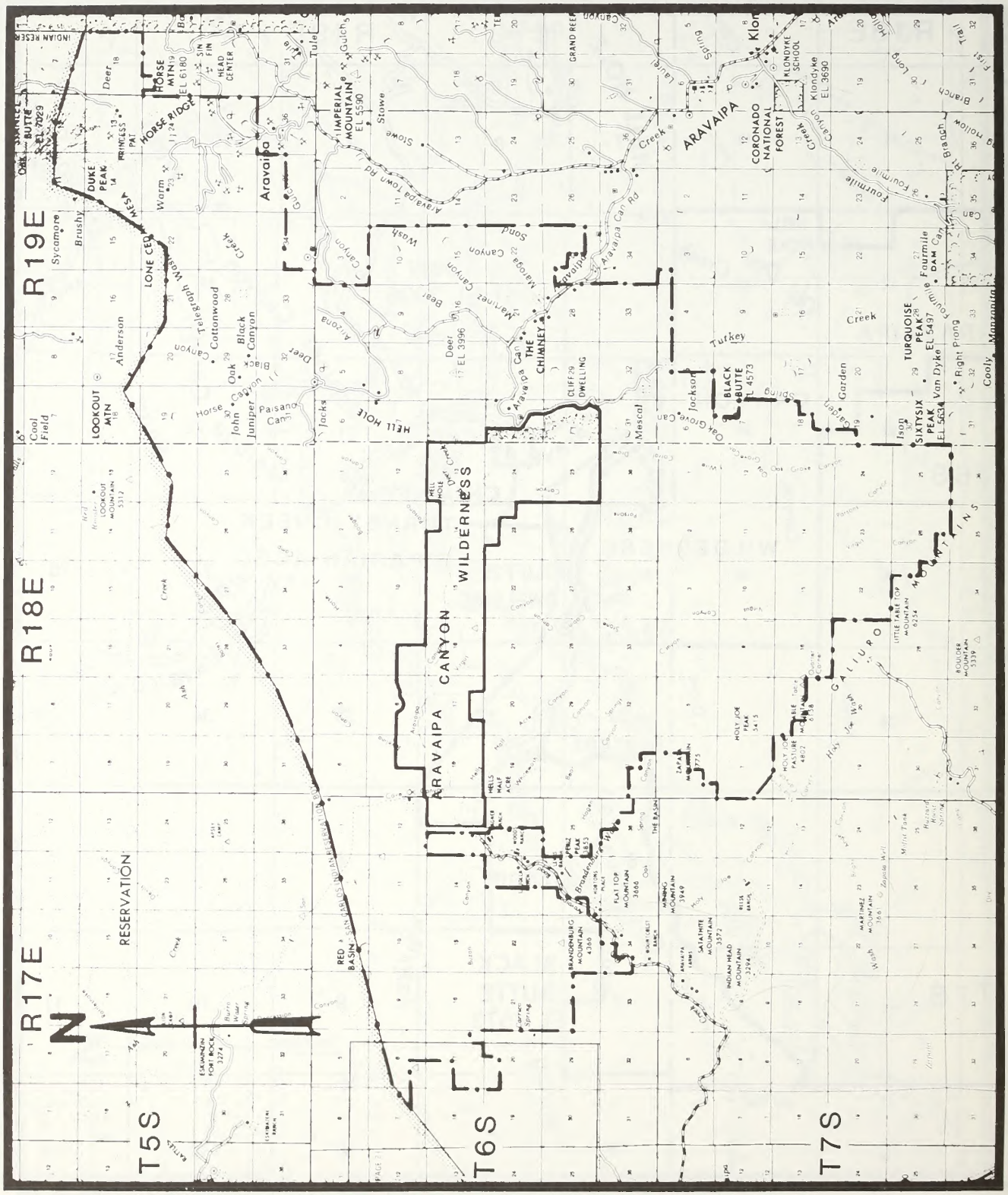
ARAVAIPA WATERSHED ACEC

MAP 5



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SOUTH RIM ACEC

MAP 6

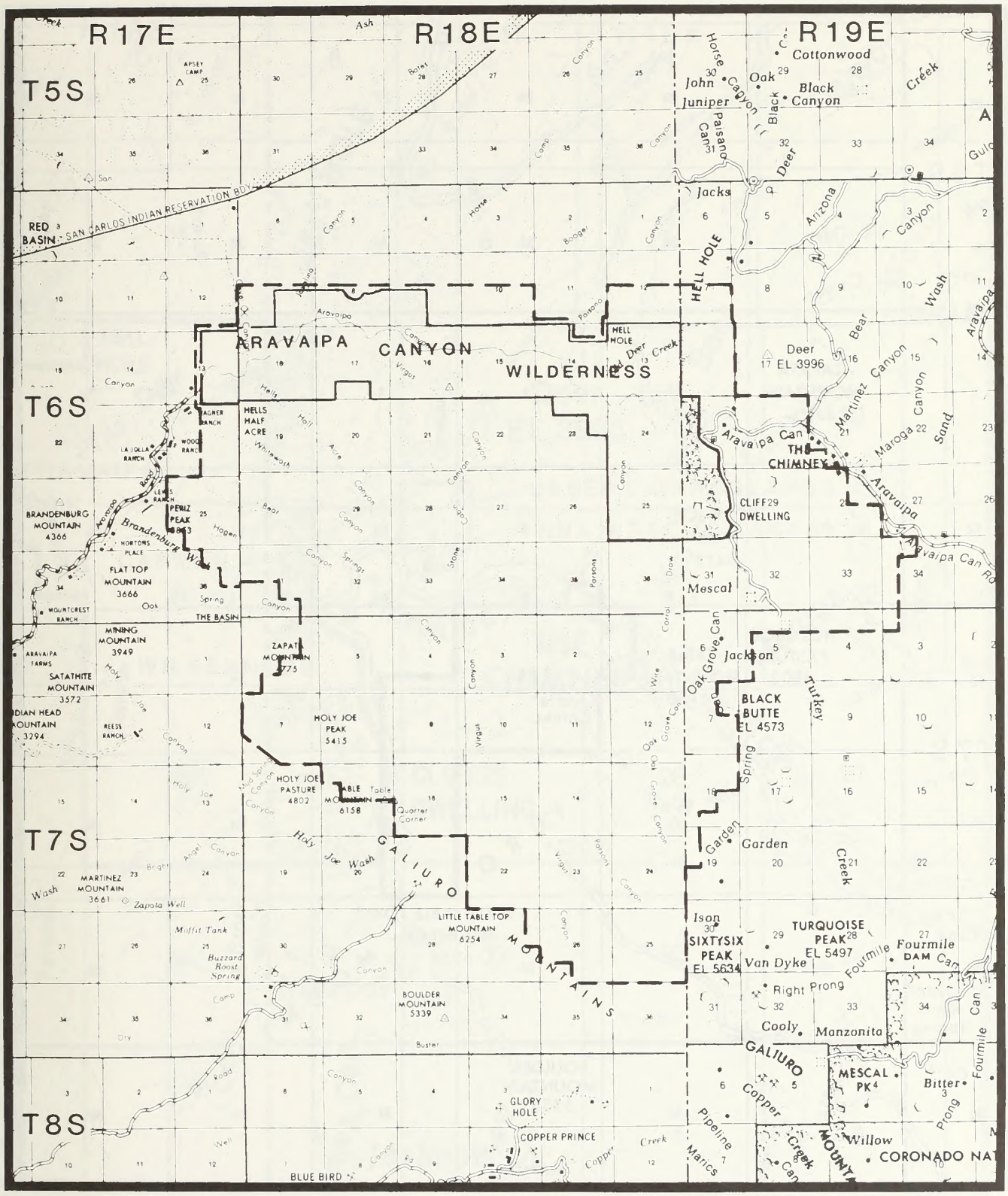

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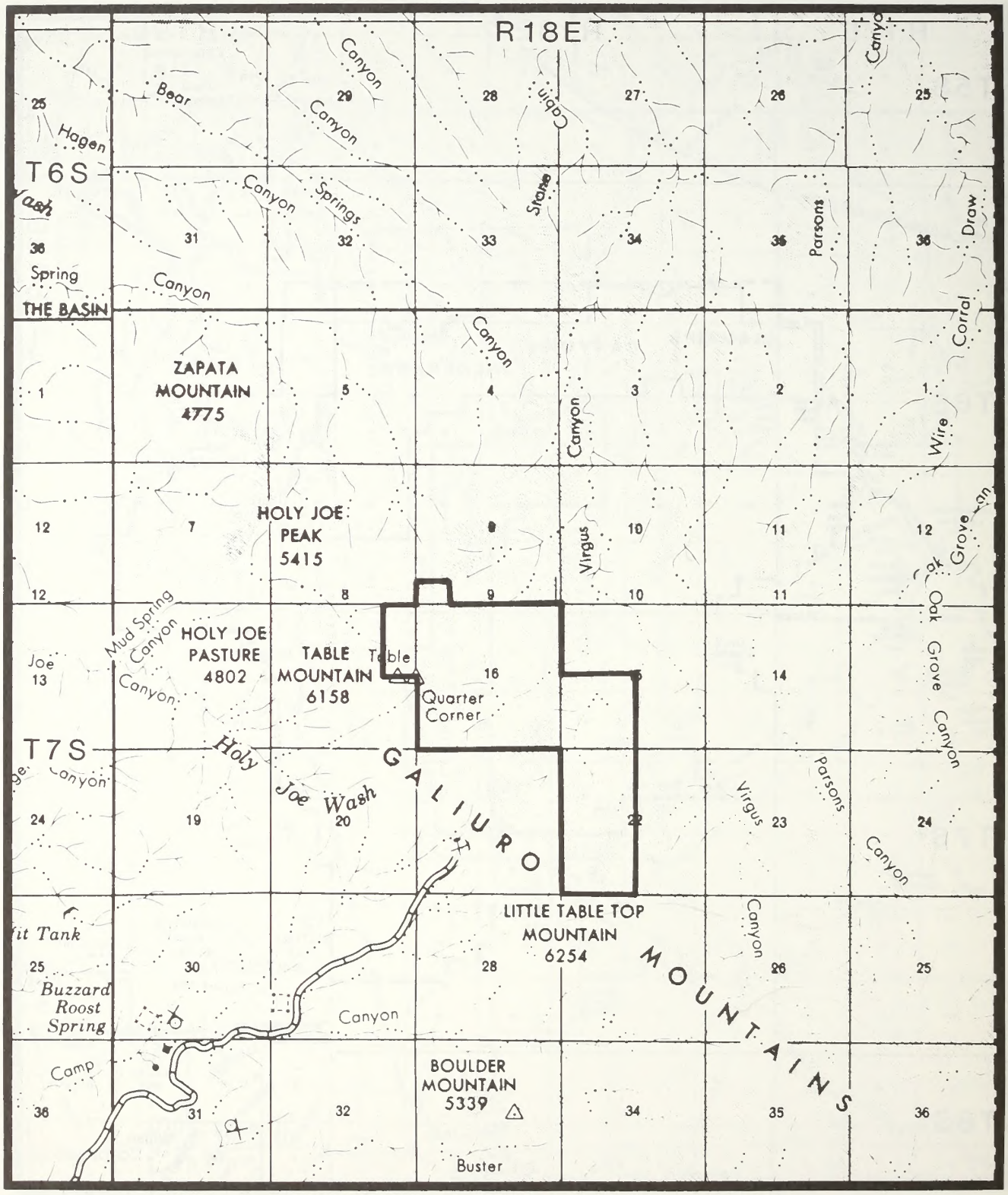
TABLE MOUNTAIN RNA ACEC

MAP 7



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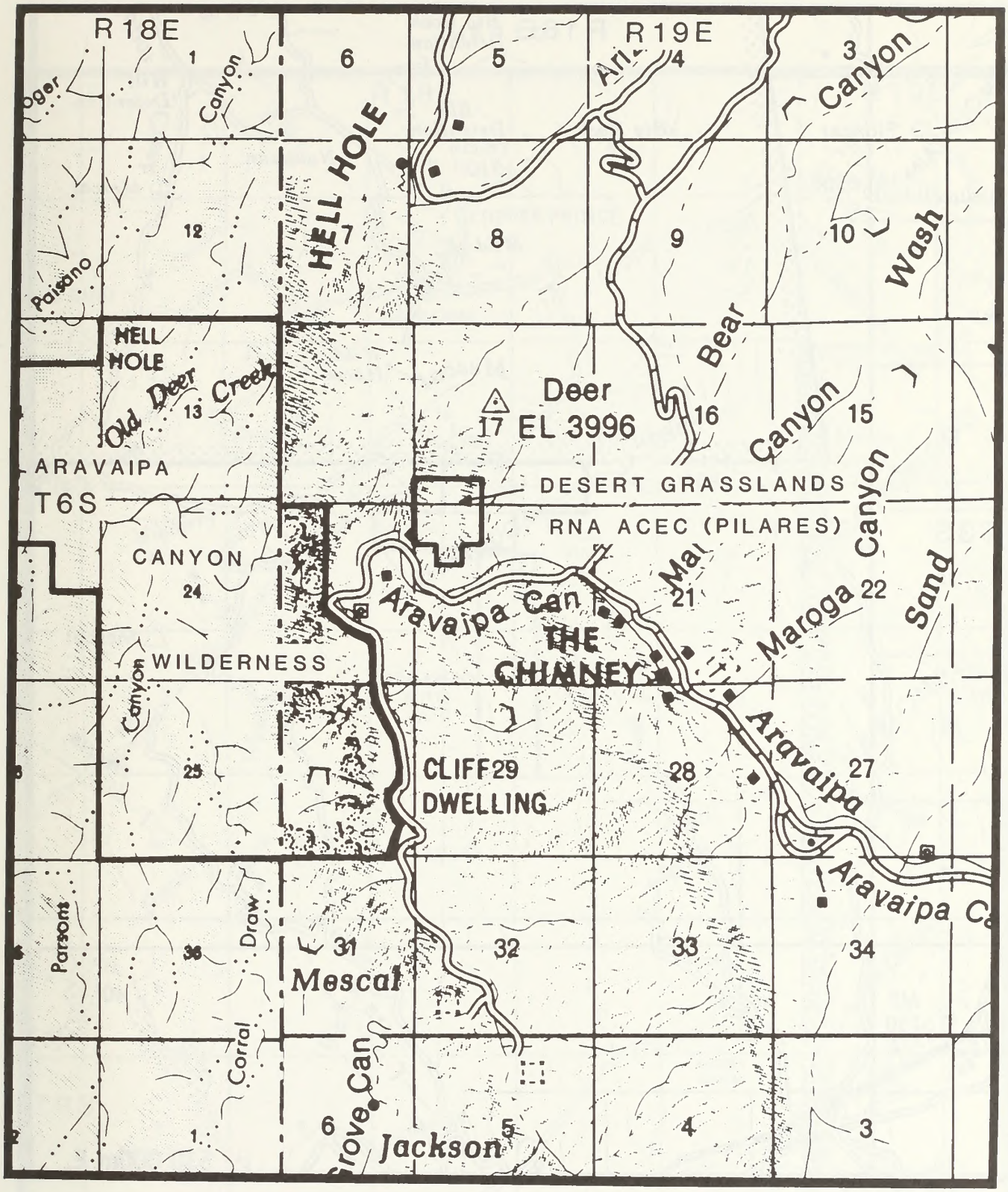
DESERT GRASSLANDS RNA ACEC (PILARES)

MAP 8



ALTERNATIVES A,B & C

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SCALE IN MILES

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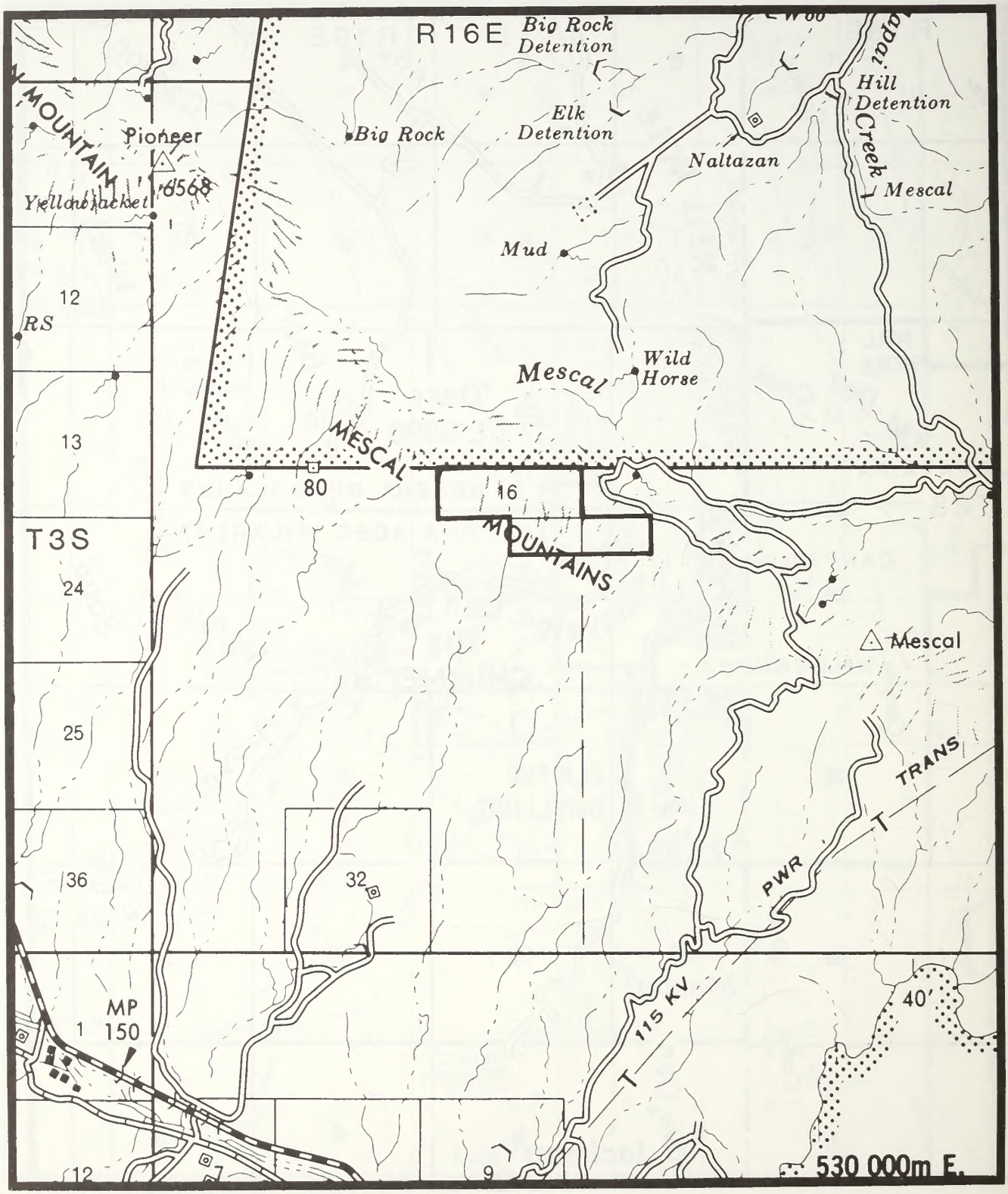
DESERT GRASSLANDS RNA ACEC (MESCAL RIDGE)

MAP 9



ALTERNATIVES A,B & C

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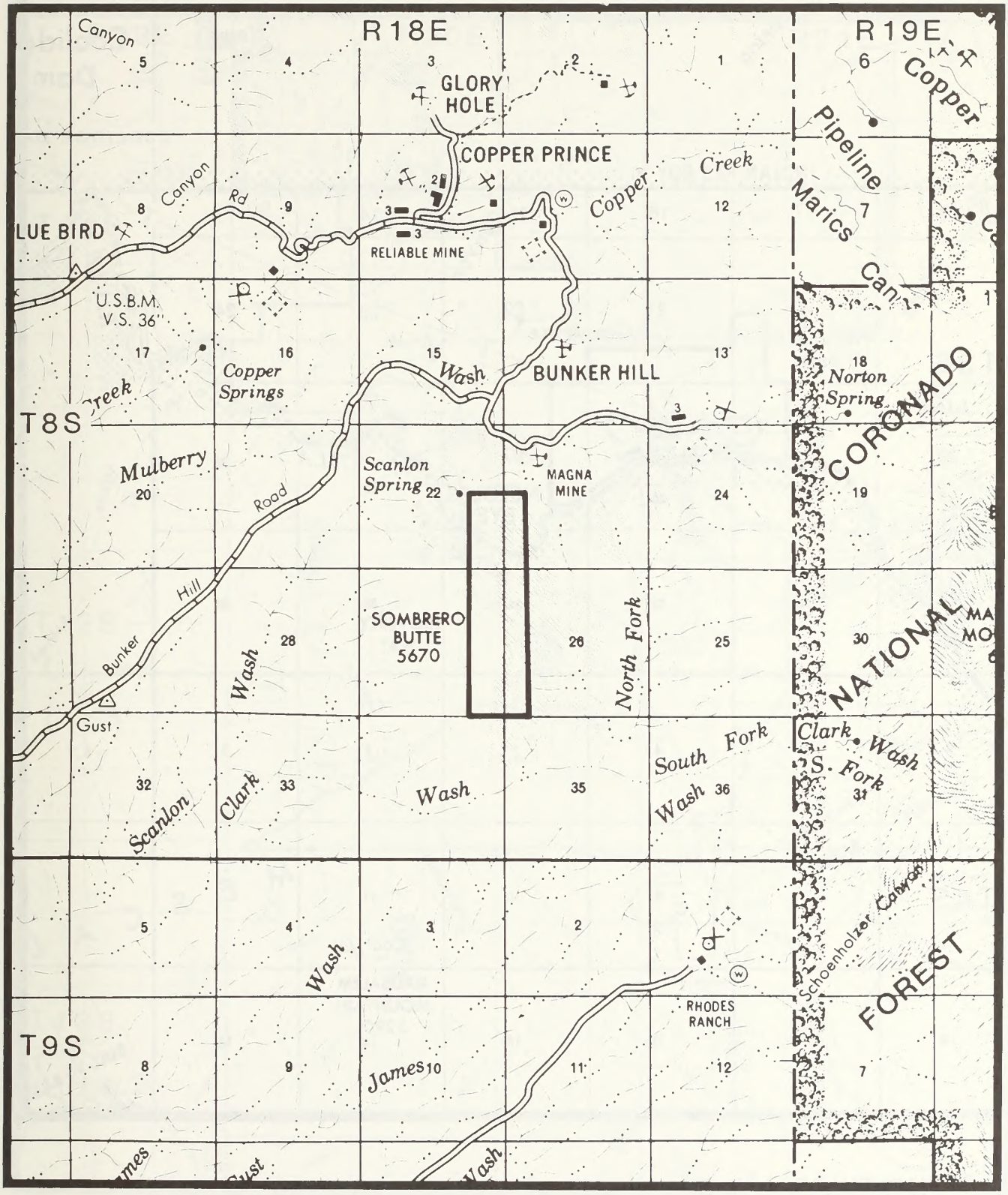
DESERT GRASSLANDS RNA ACEC

(SOMBRERO BUTTE)

MAP 10



ALTERNATIVES A,B & C

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SCALE IN MILES

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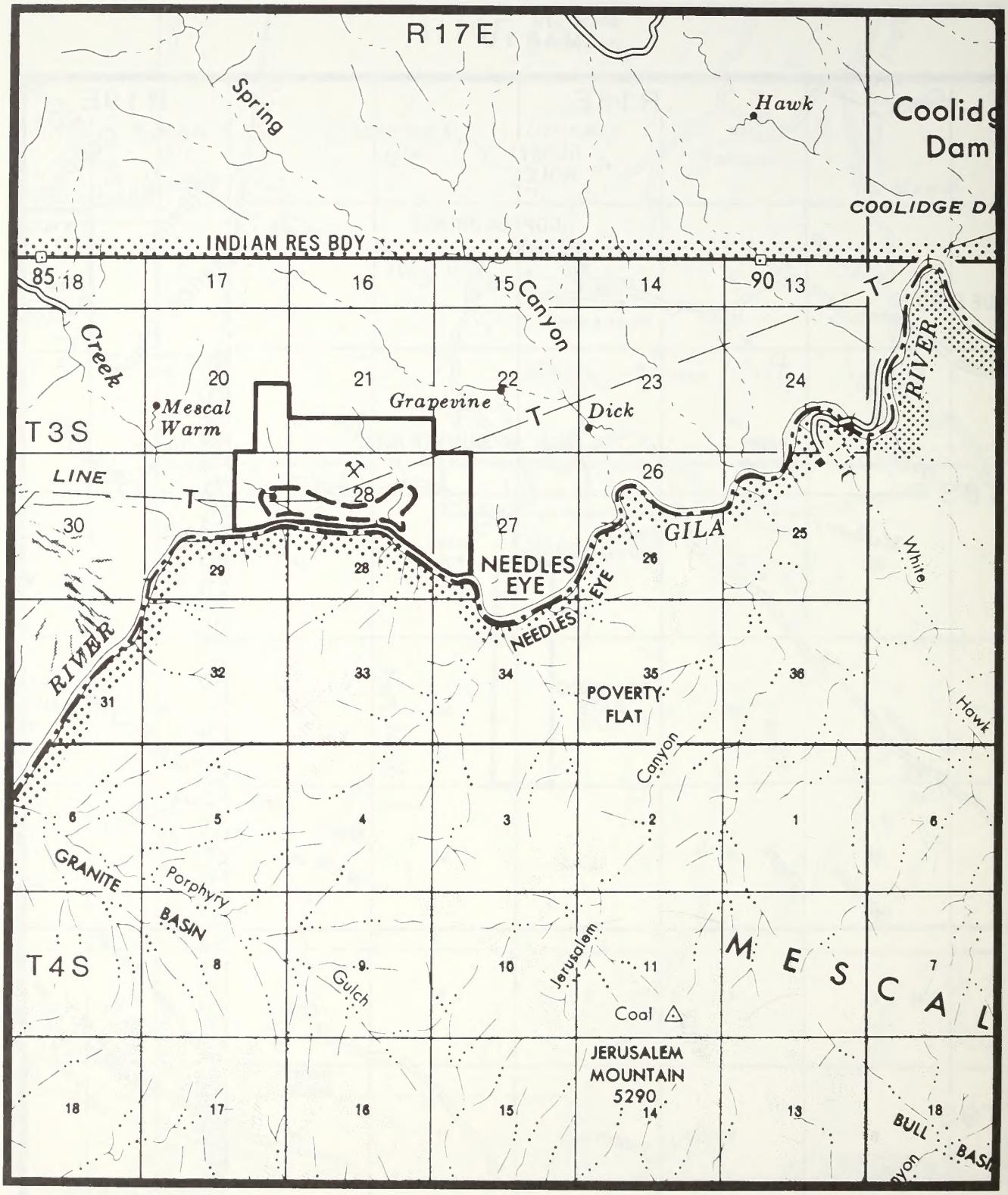
DRY SPRING RNA ACEC

MAP 11



ALTERNATIVES A & B

ALTERNATIVE C

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SCALE IN MILES

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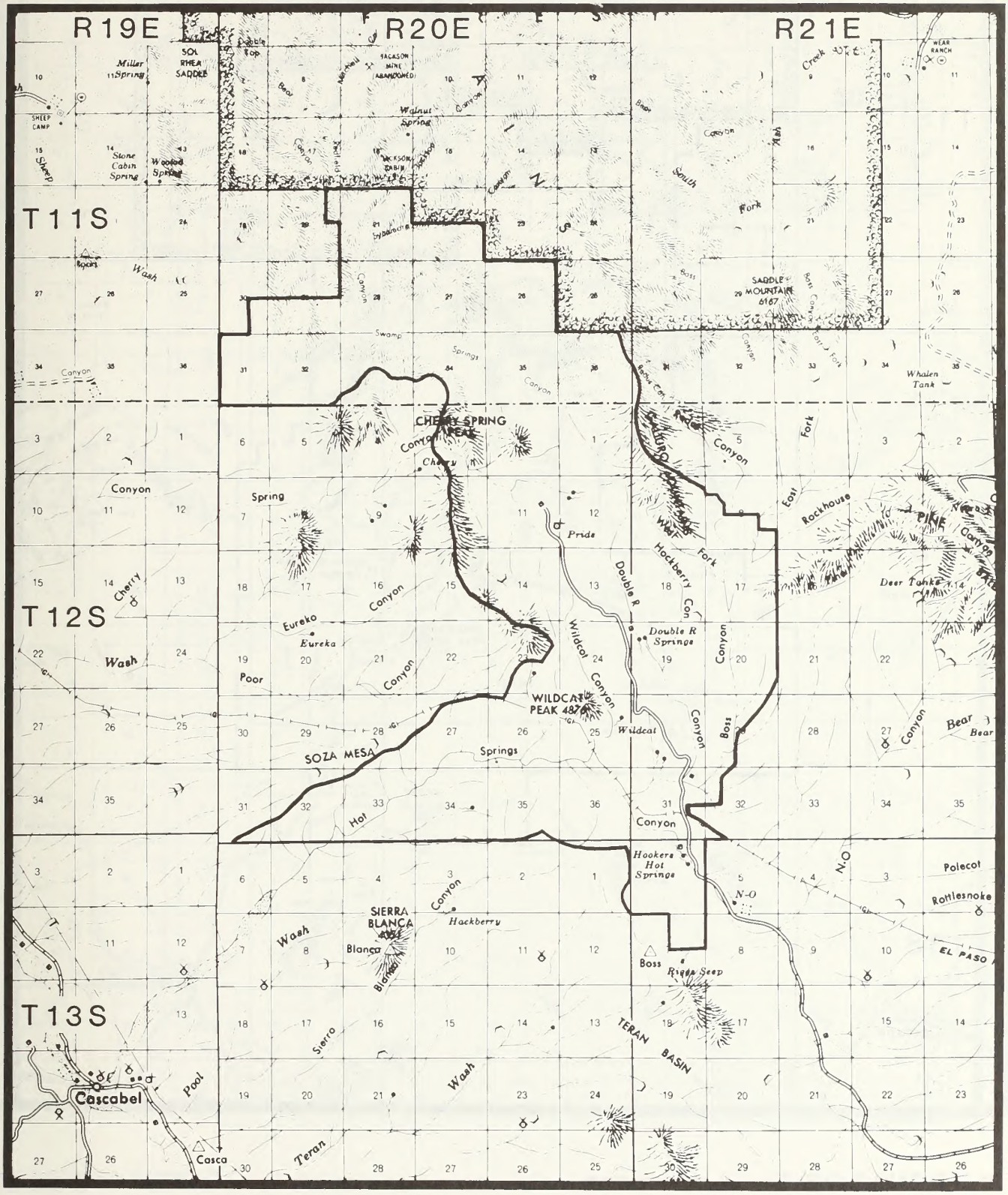
SWAMP SPRINGS-HOT SPRINGS

WATERSHED ACEC

MAP 12



ALTERNATIVE A

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SCALE IN MILES

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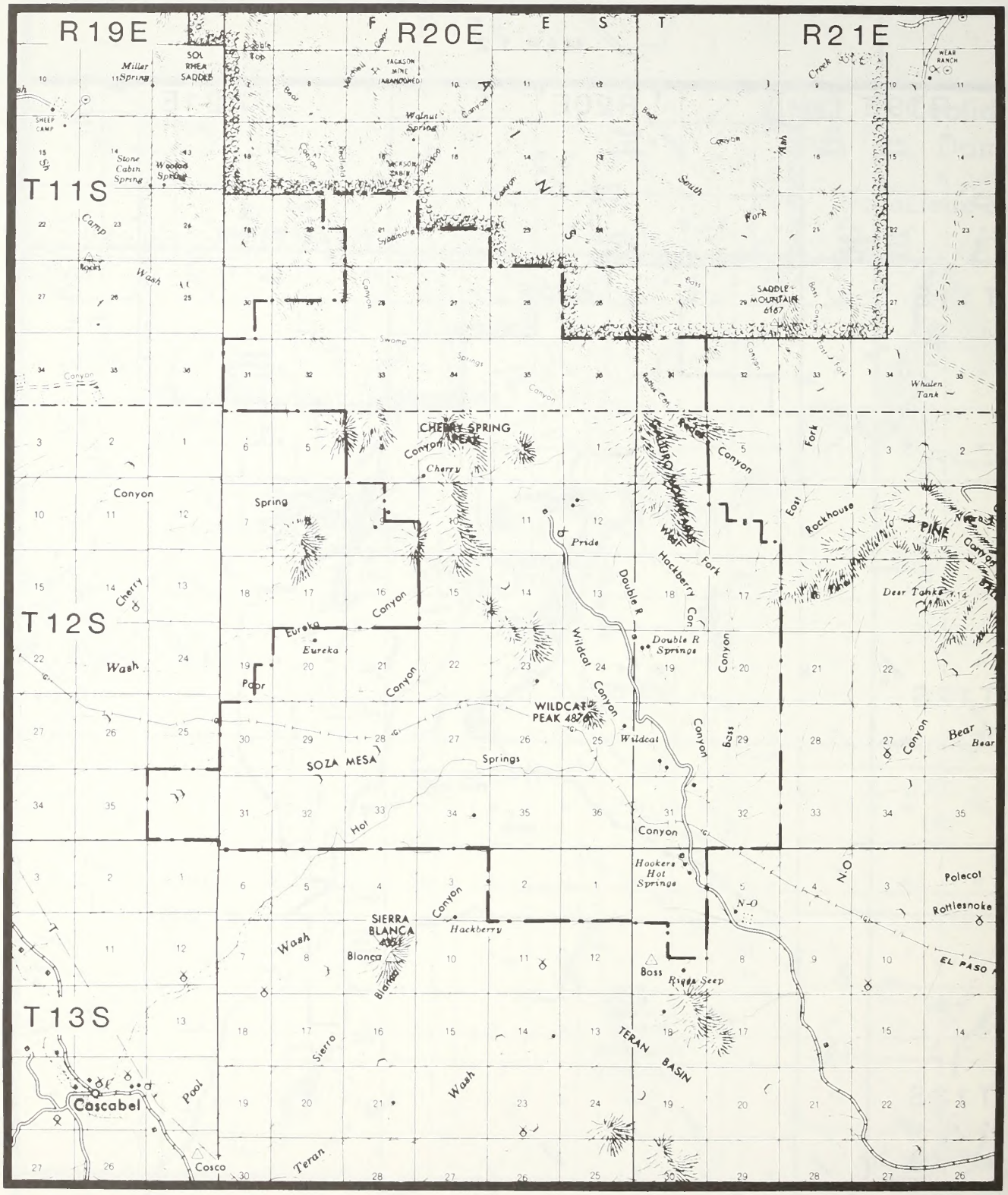
MULESHOE RANCH ACEC

MAP 13



ALTERNATIVE B —·—·—

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SCALE IN MILES

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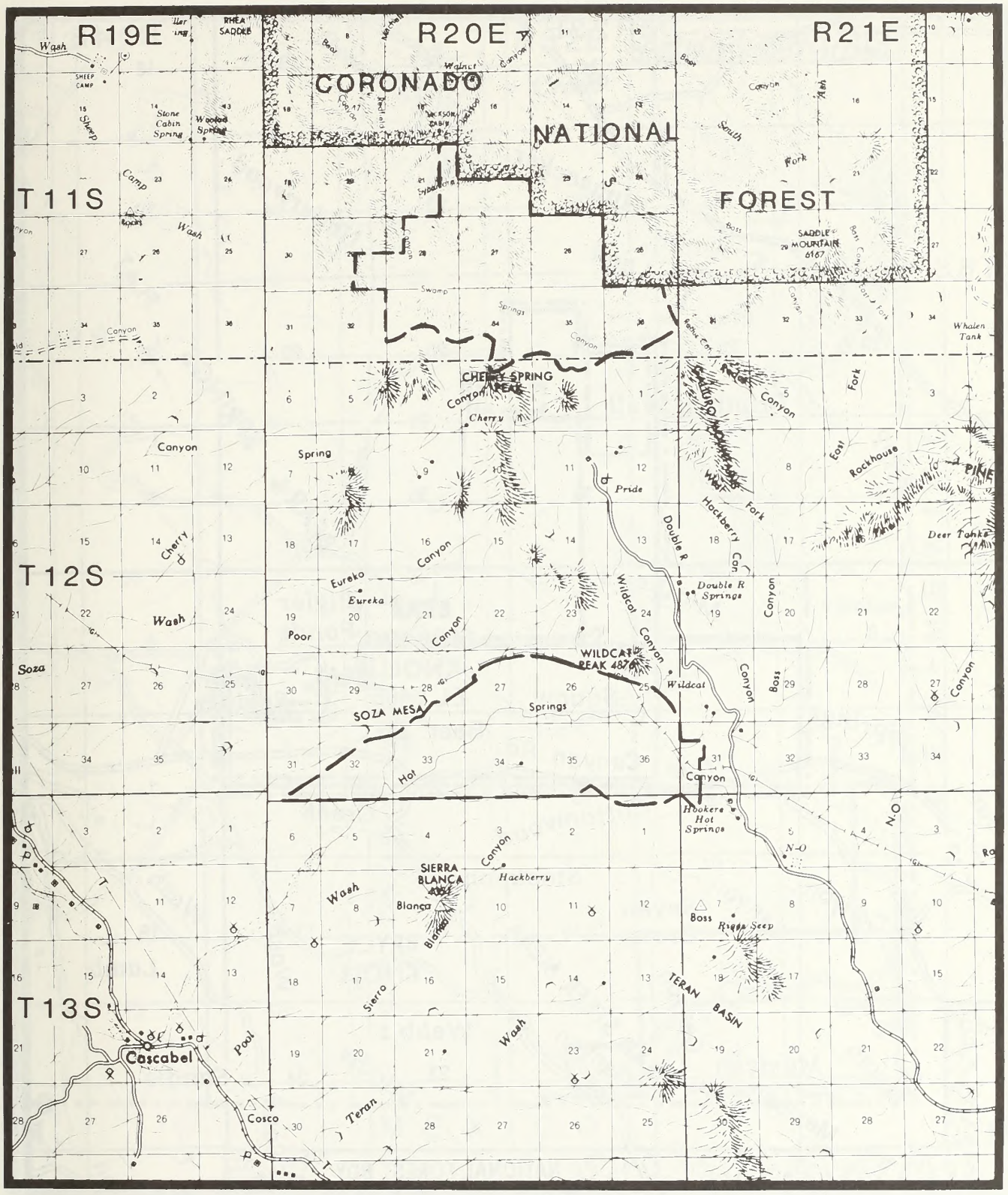
MULESHOE RIPARIAN ACEC

MAP 14



ALTERNATIVE C — — —

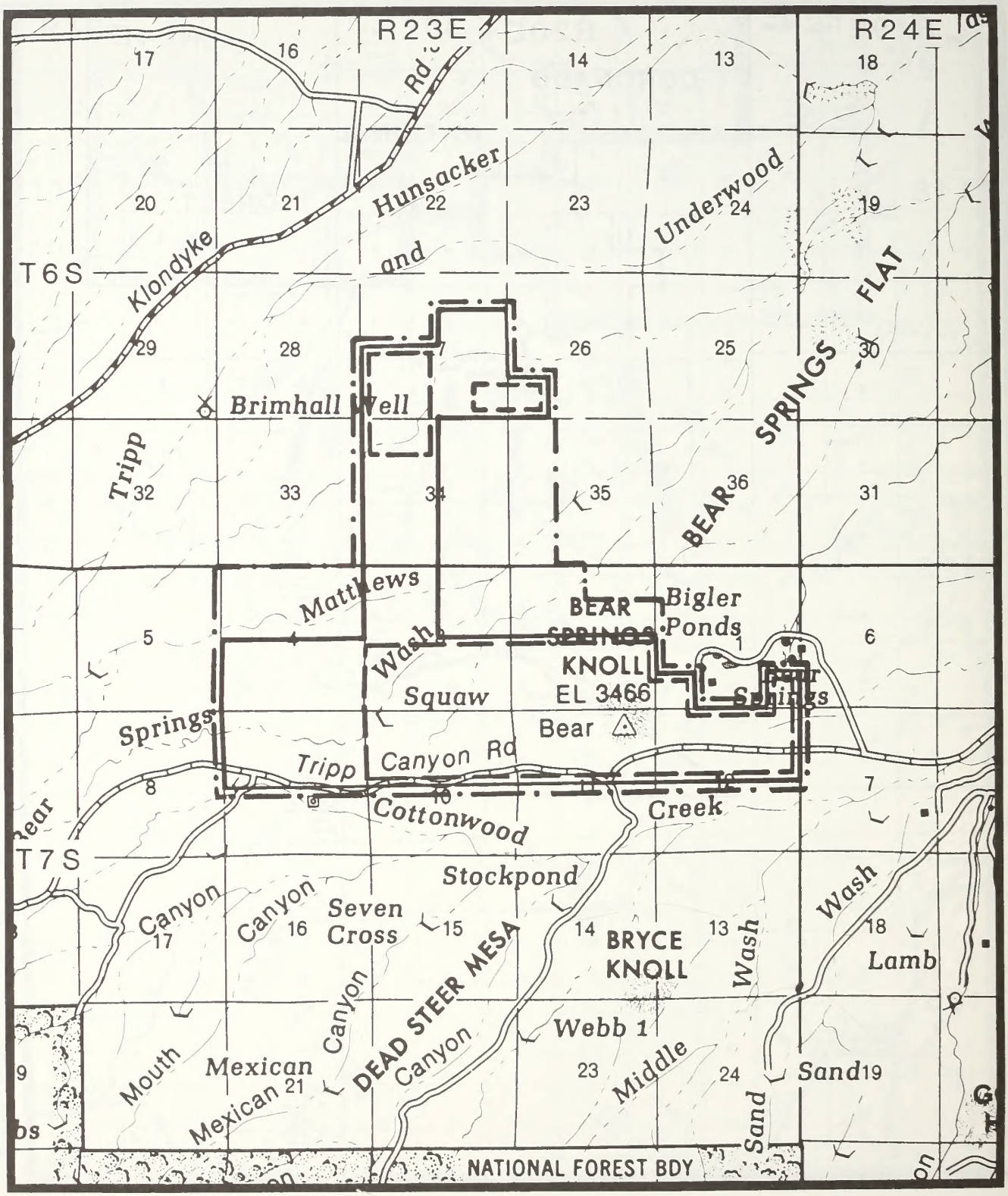
0 1 2 3

SCALE IN MILES

Basemap © Az. Dept. of Trans.

BEAR SPRINGS BADLANDS ACEC

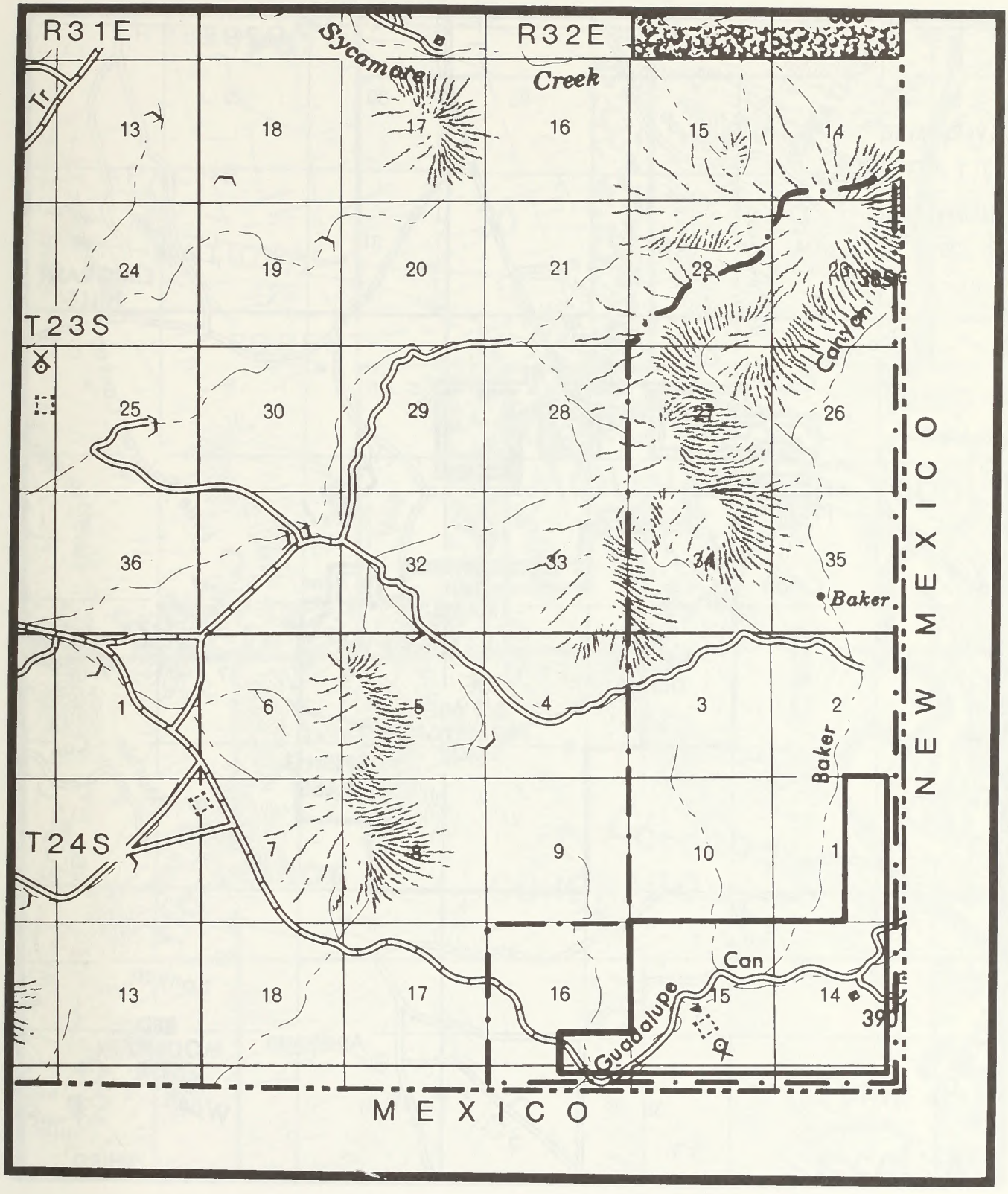
MAP 15



Basemap © Az. Dept. of Trans.

GUADALUPE CANYON ONA ACEC

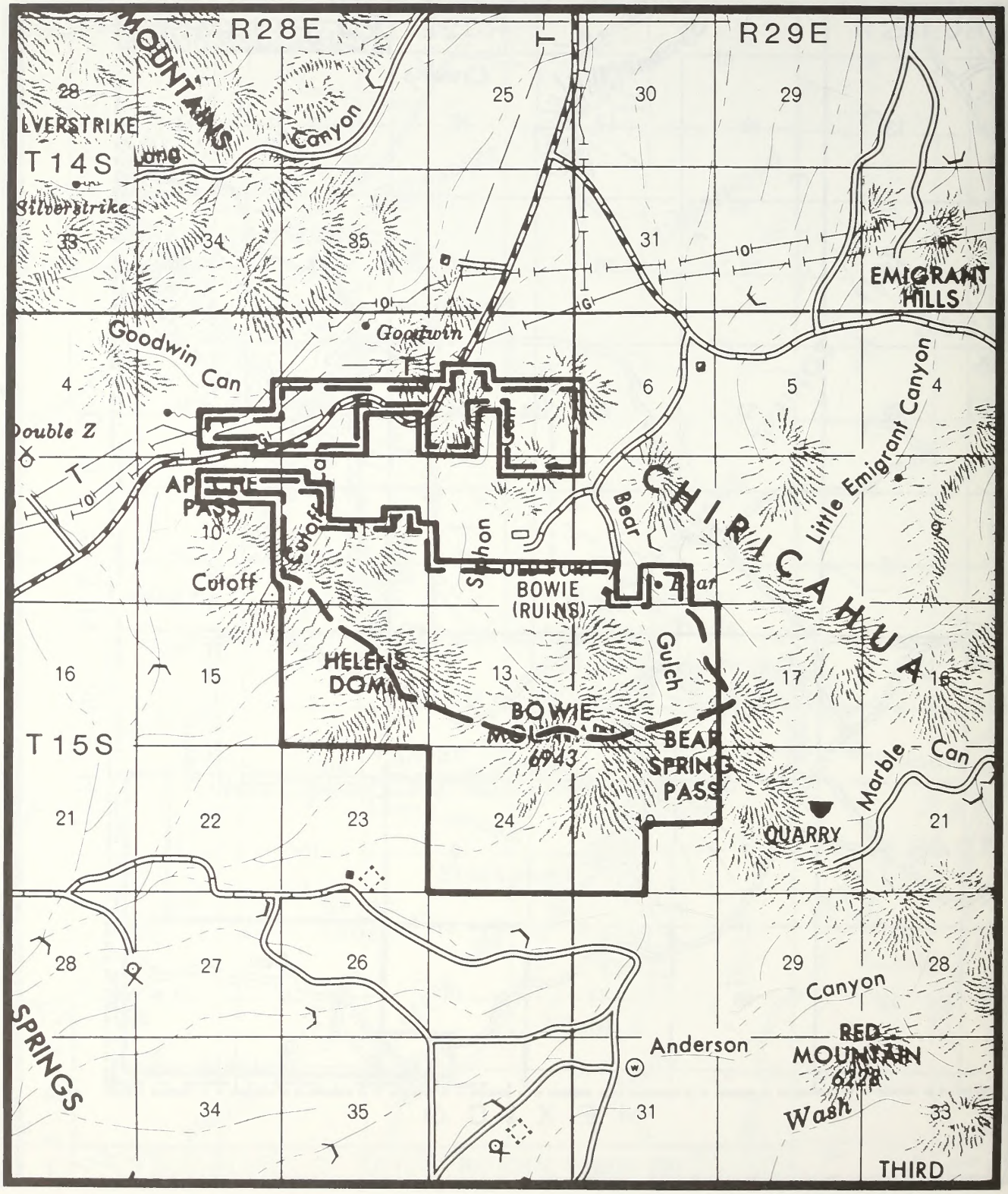
MAP 16



Basemap © Az. Dept. of Trans.

BOWIE MOUNTAIN SCENIC ACEC

MAP 17



ALTERNATIVES A & B

ALTERNATIVE C

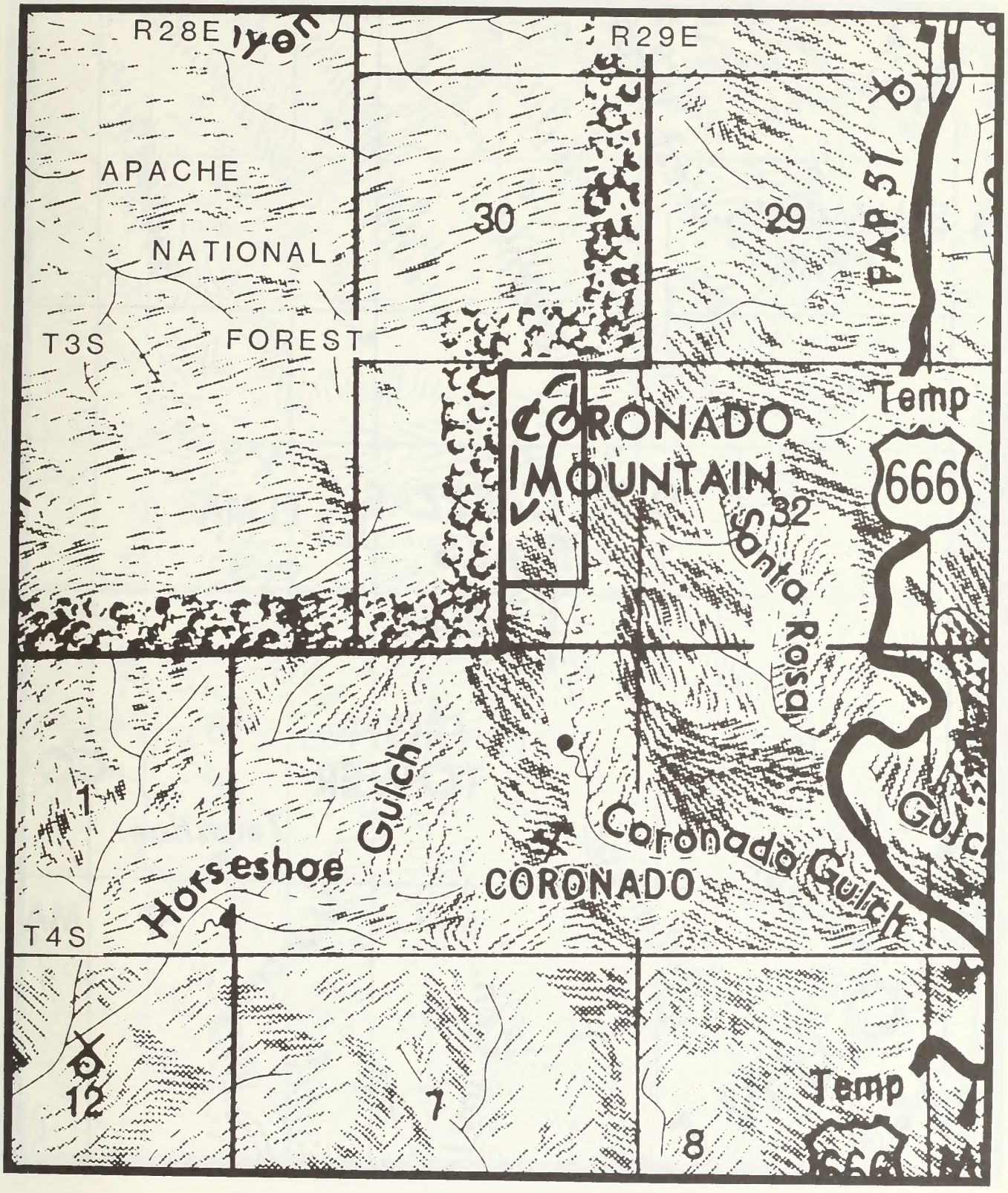
0 1 2

SCALE IN MILES

Basemap © Az. Dept. of Trans.

CORONADO MOUNTAIN RNA ACEC

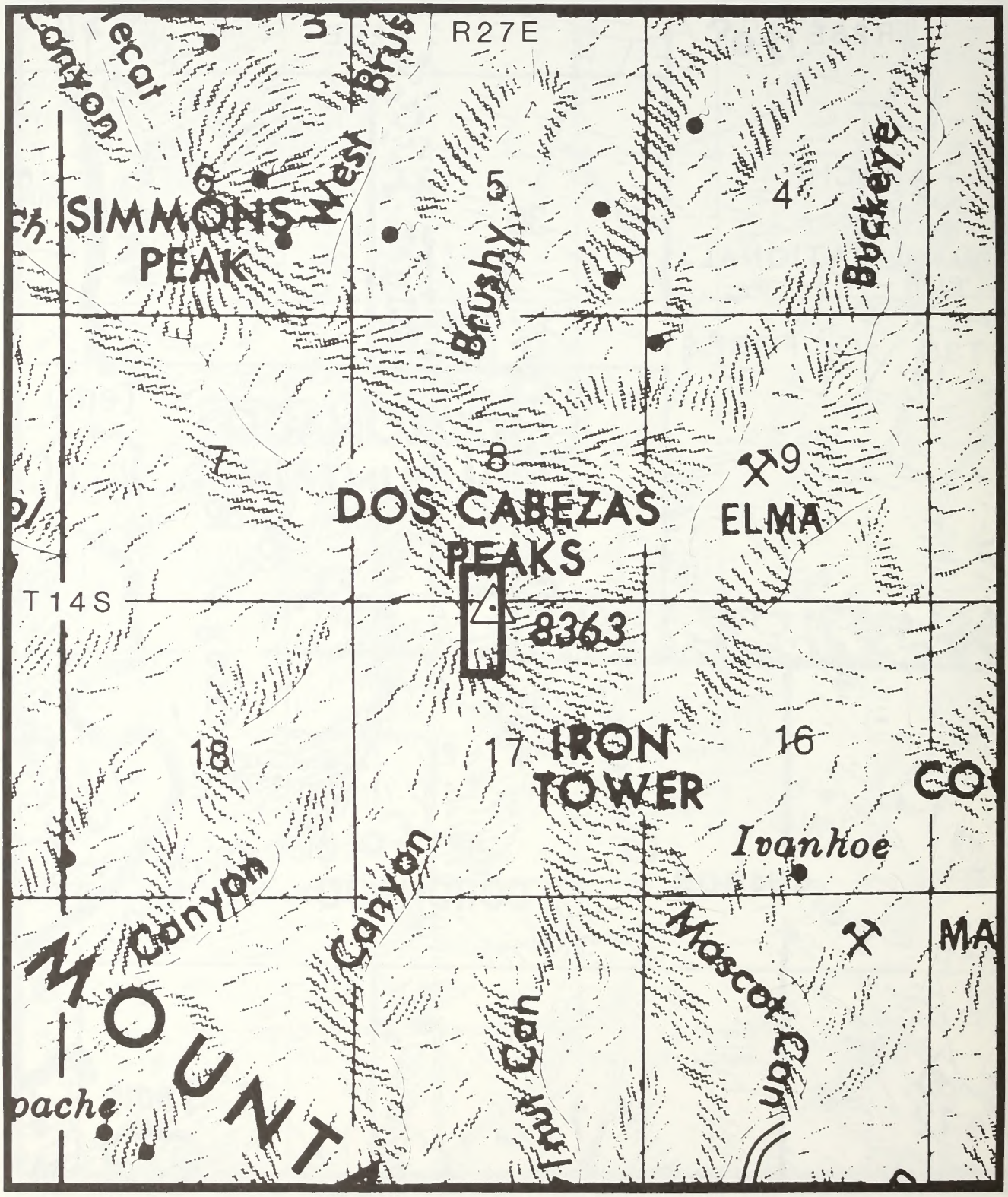
MAP 18



Basemap © Az. Dept. of Trans.

DOS CABEZAS PEAKS ACEC

MAP 19



ALTERNATIVES A & B

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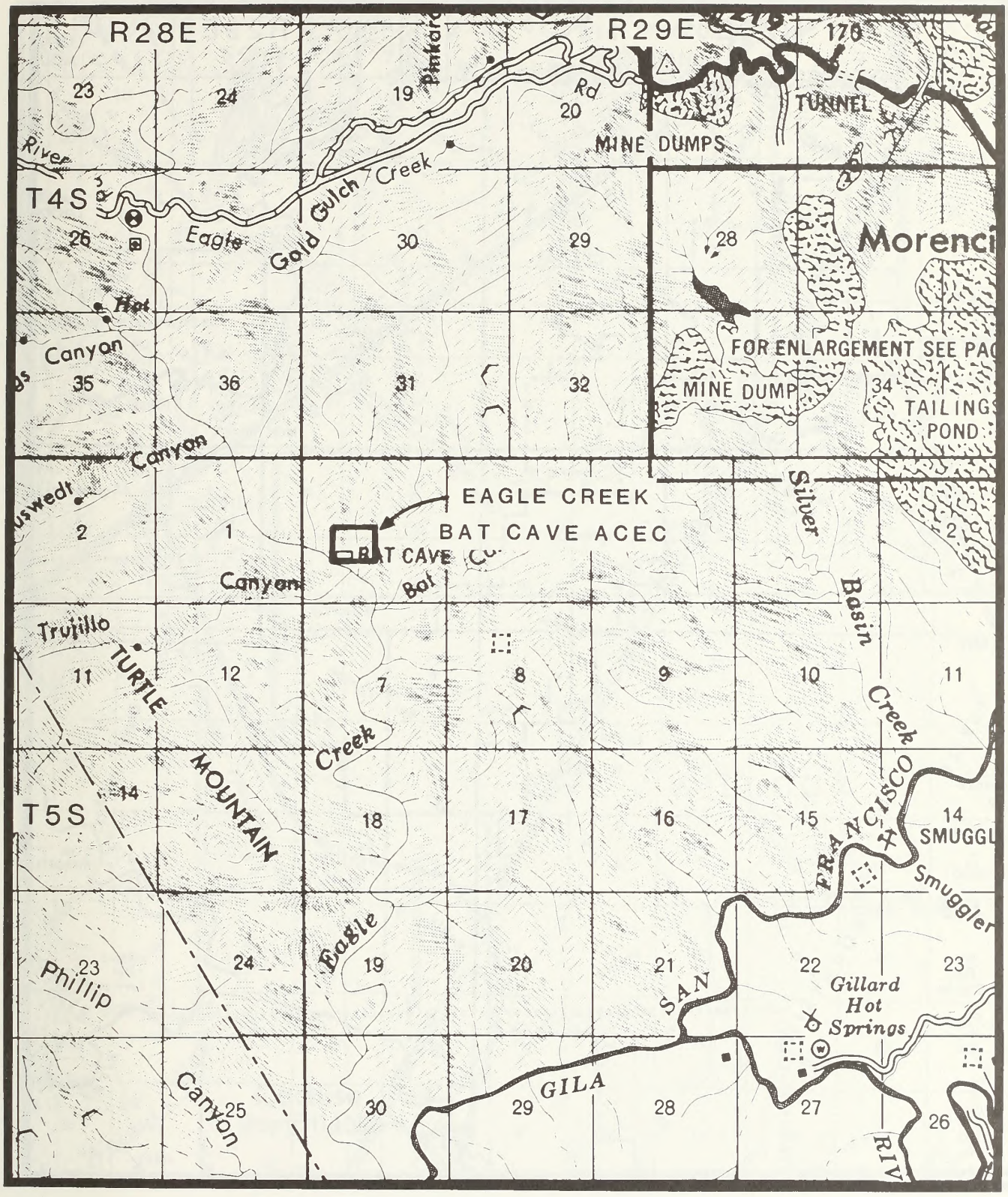
SCALE IN MILES

Basemap © Az. Dept. of Trans.

EAGLE CREEK BAT CAVE ACEC

MAP 20



ALTERNATIVES A & C

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SCALE IN MILES

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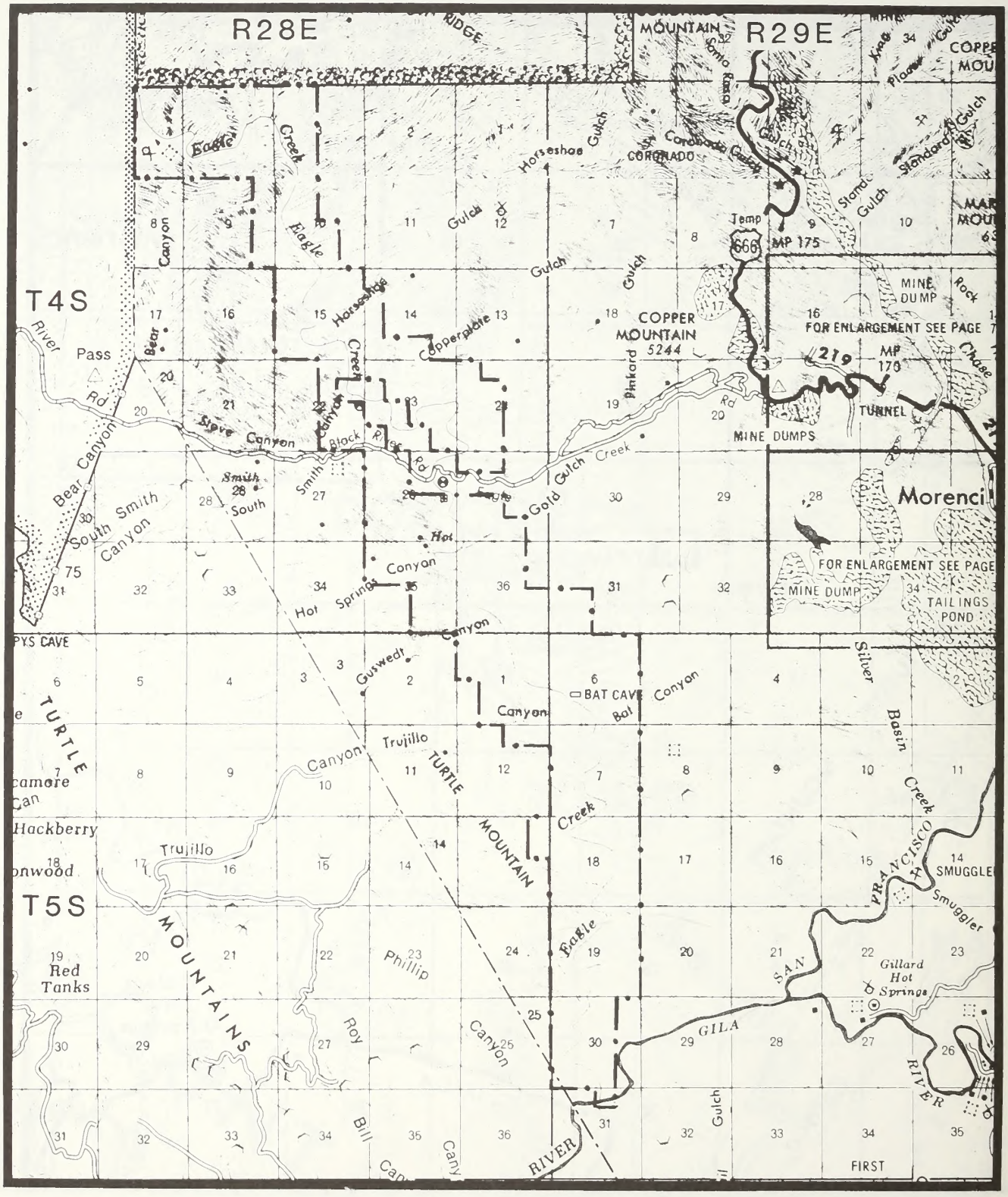
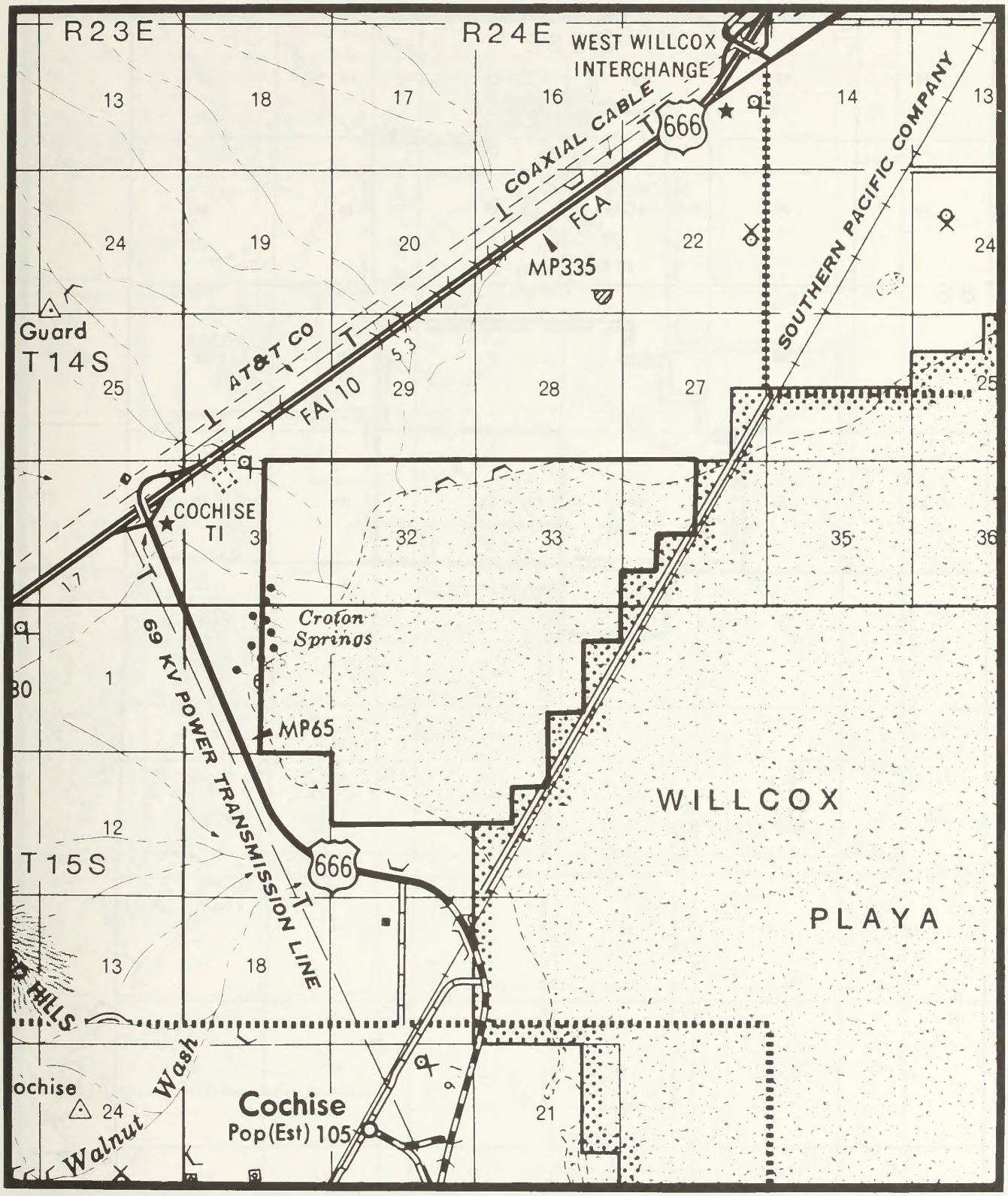
EAGLE CREEK CANYON ONA ACEC

MAP 21



WILLCOX PLAYA NNL ACEC

MAP 22



ALTERNATIVES A,B & D

0 1 2

SCALE IN MILES

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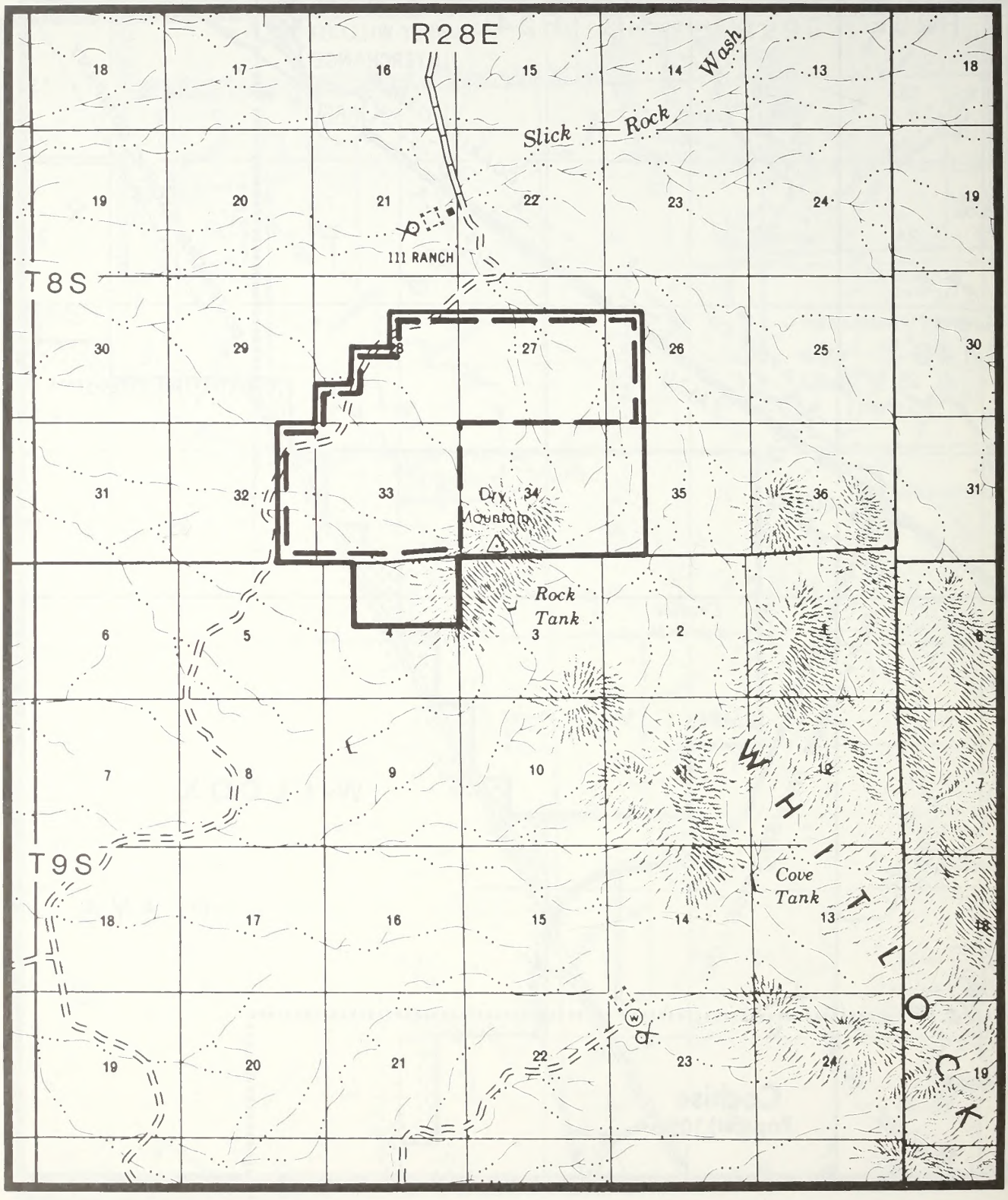
111 RANCH RNA ACEC

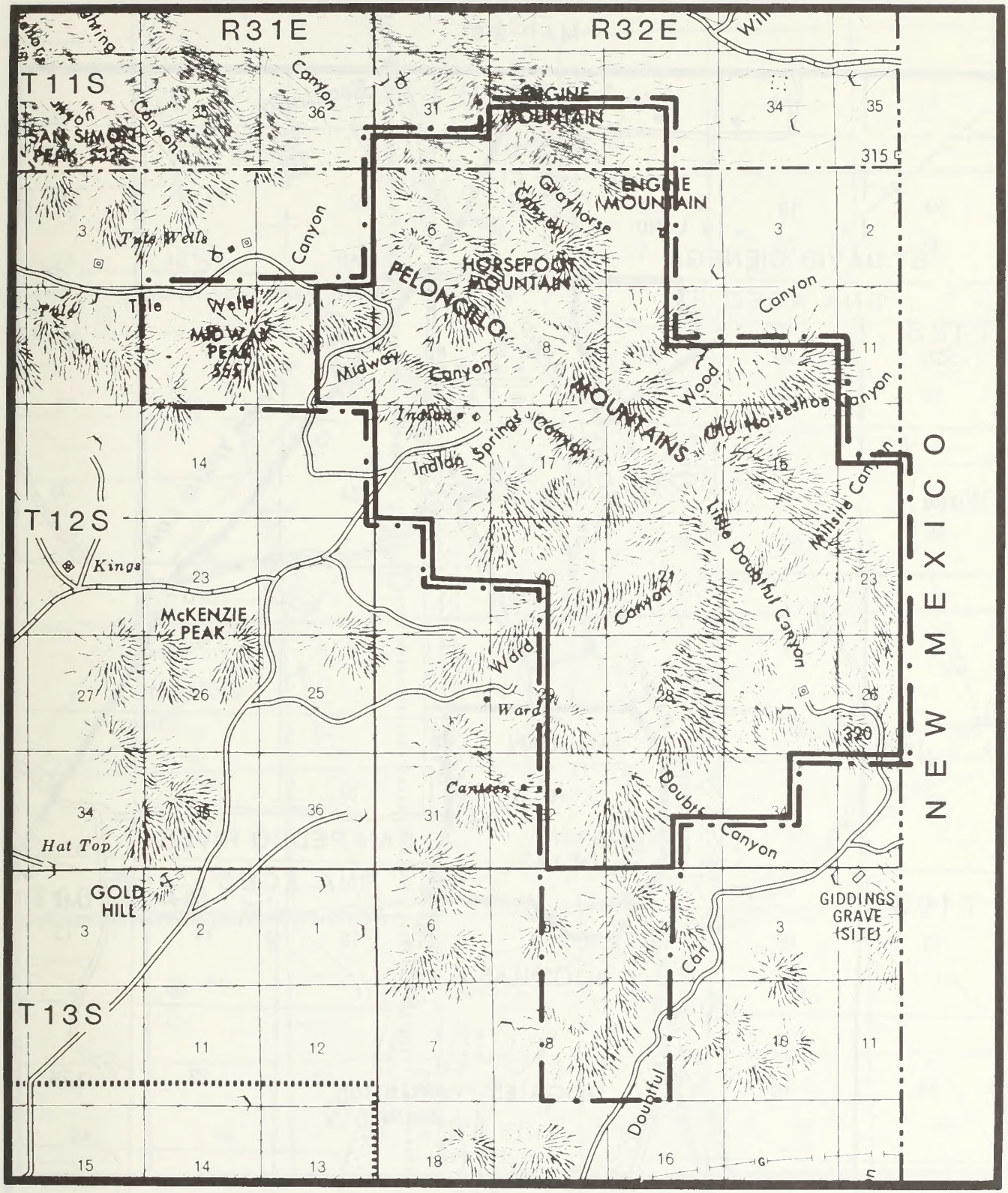
MAP 23



Basemap © Az. Dept. of Trans.

PELONCILLO MOUNTAINS ONA ACEC

MAP 24



ALTERNATIVES A & C

ALTERNATIVE B

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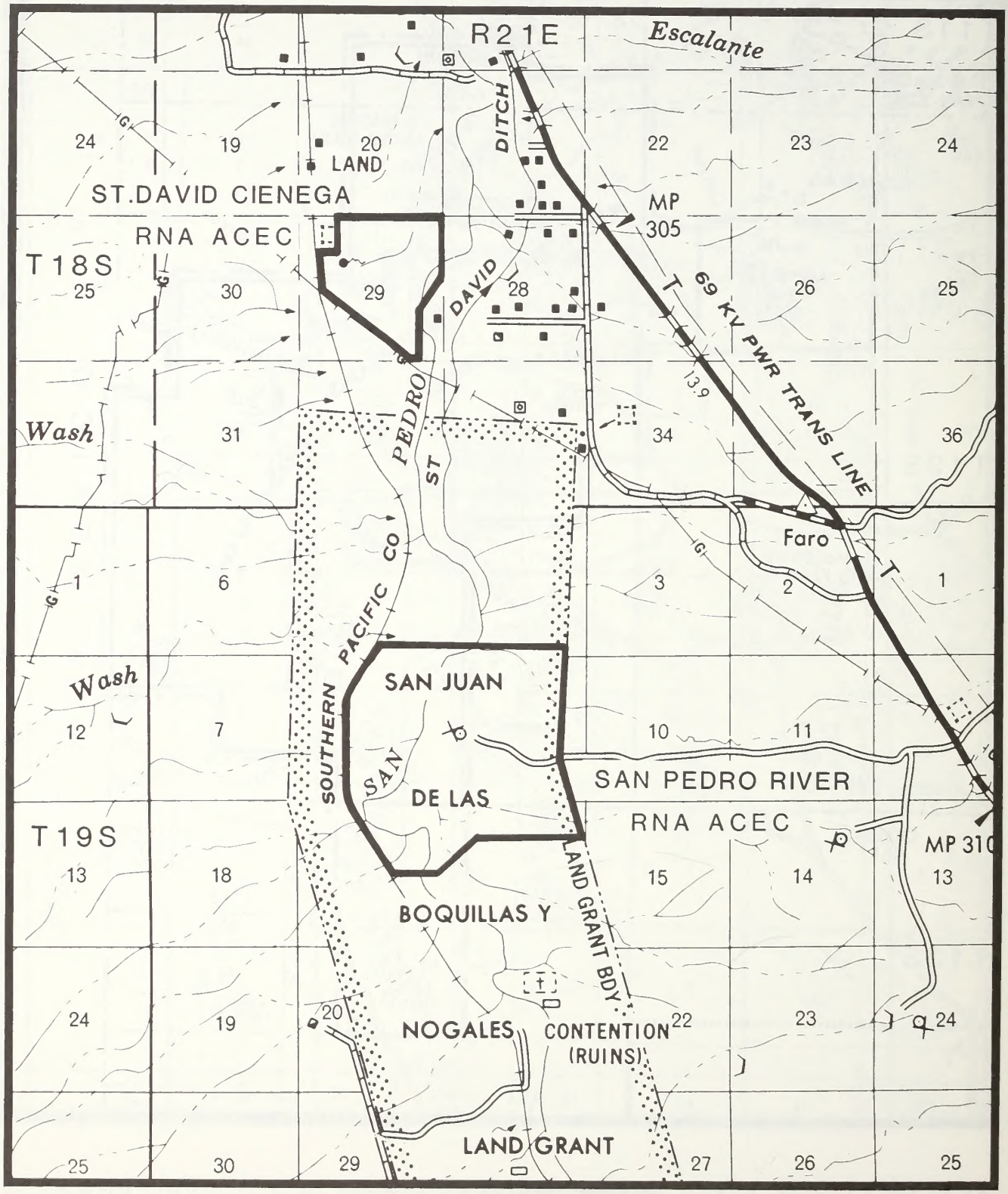
SCALE IN MILES

Basemap © Az. Dept. of Trans.

ST. DAVID CIENEGA RNA ACEC

SAN PEDRO RIVER RNA ACEC

MAP 25



ALTERNATIVES A,B,C & D

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SCALE IN MILES

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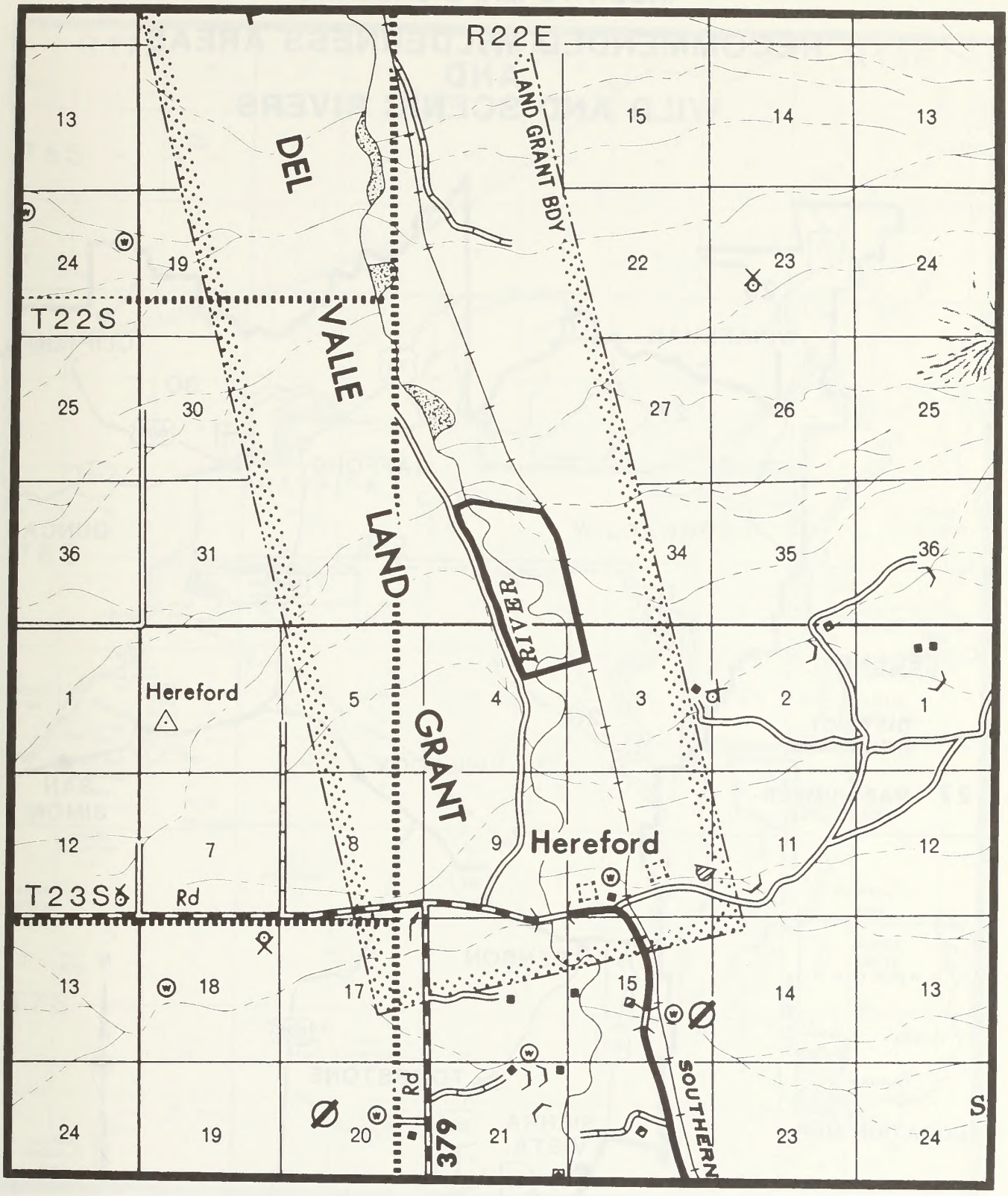
SAN RAFAEL RNA ACEC

MAP 26



ALTERNATIVES A,B,C & D

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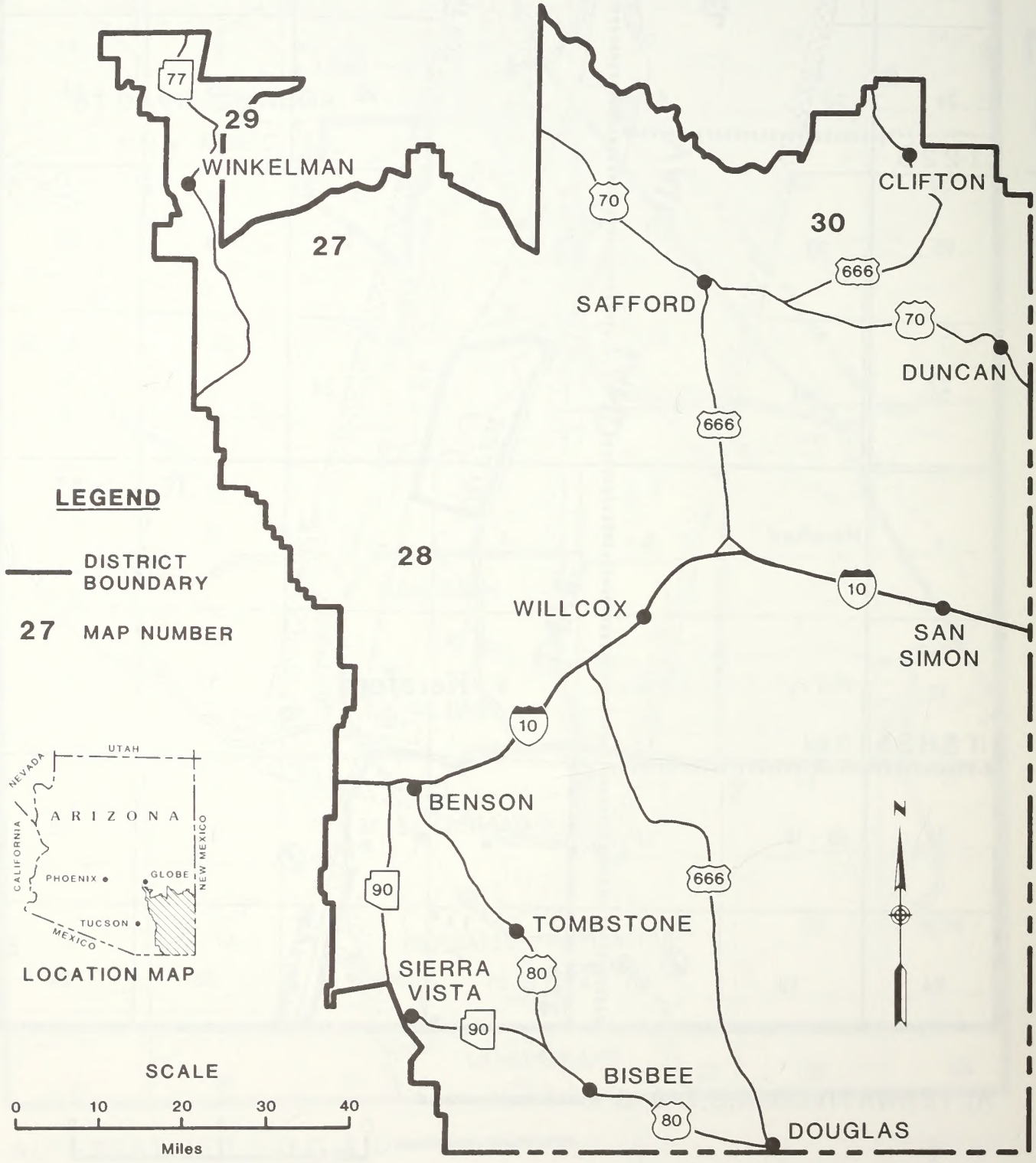
SCALE IN MILES

Basemap © Az. Dept. of Trans.

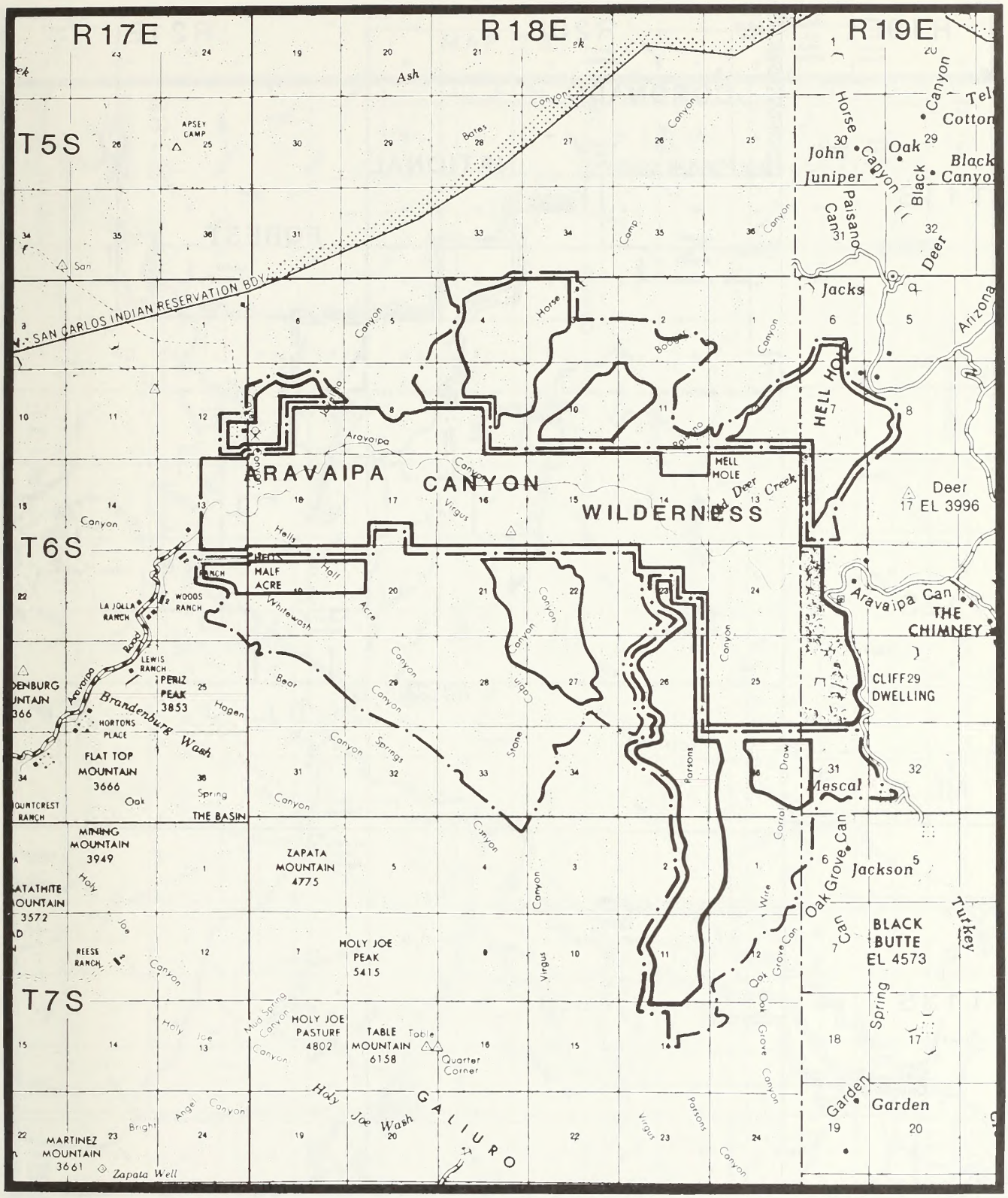
INDEX TO MAPS SHOWING

RECOMMENDED WILDERNESS AREAS AND WILD AND SCENIC RIVERS



ARAVAIPA CANYON WILDERNESS ADDITIONS

MAP 27



ALTERNATIVE A

ALTERNATIVE B

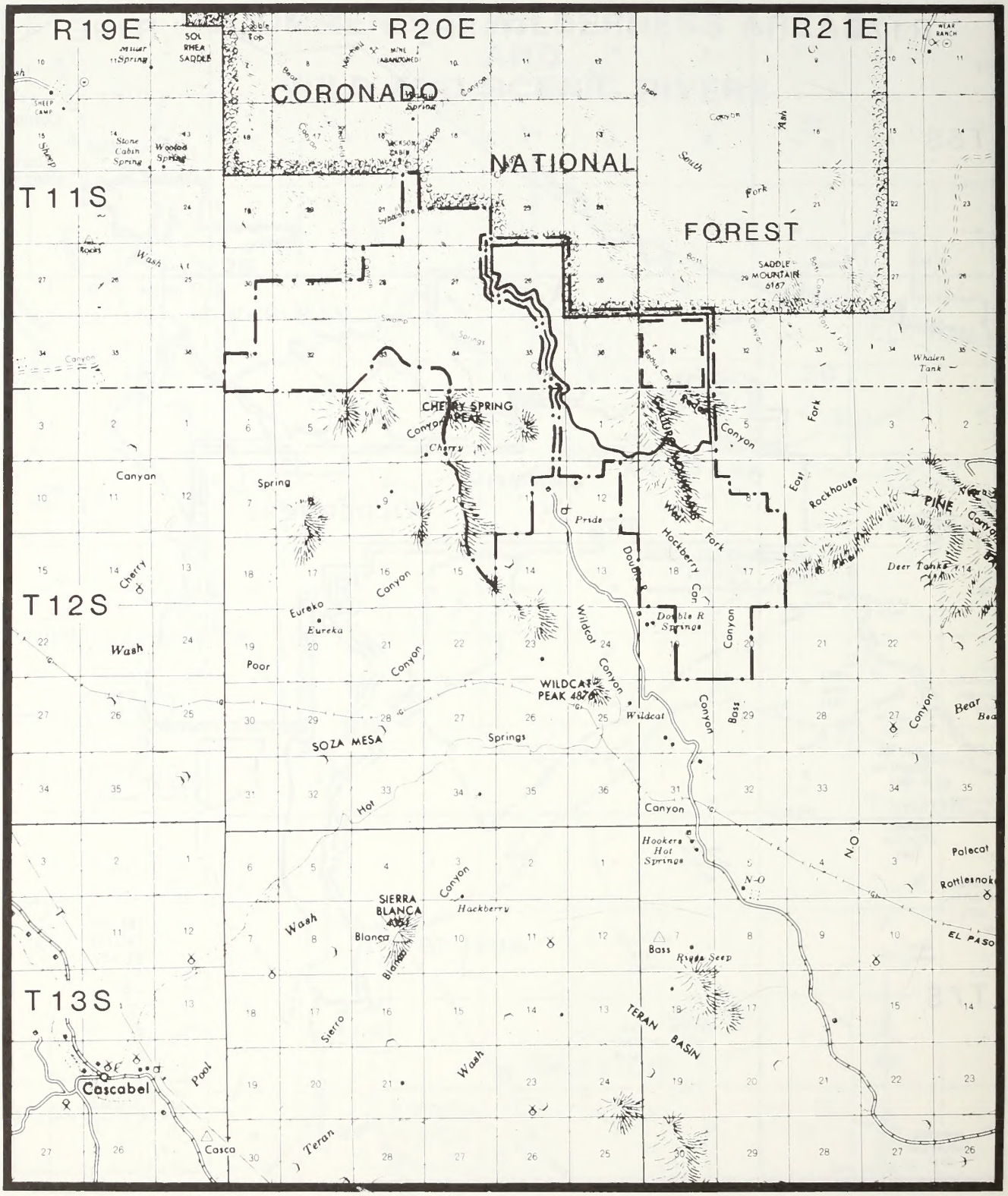
0 1 2 3

SCALE IN MILES

Basemap © Az. Dept. of Trans.

GALIURO WILDERNESS ADDITIONS

MAP 28



ALTERNATIVE A ——————

ALTERNATIVE B —— · —— · ——

ALTERNATIVES C & D — — — — —

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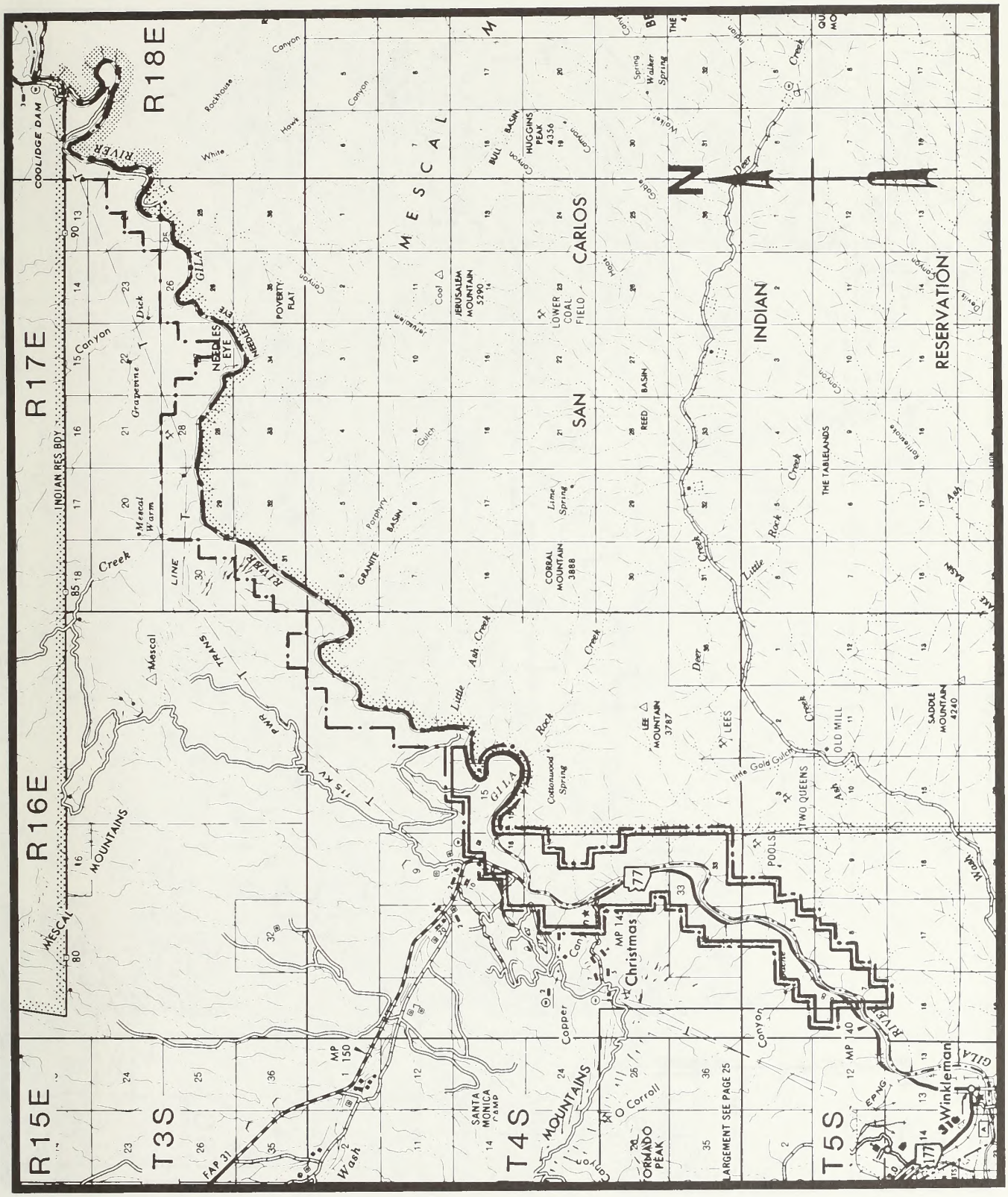
SCALE IN MILES

Basemap © Az. Dept. of Trans.

GILA WILD AND SCENIC RIVER

(Coolidge Dam to Winkelman)

MAP 29



ALTERNATIVE A ——————

ALTERNATIVE B —·—·—

LARGEMENT SEE PAGE 25

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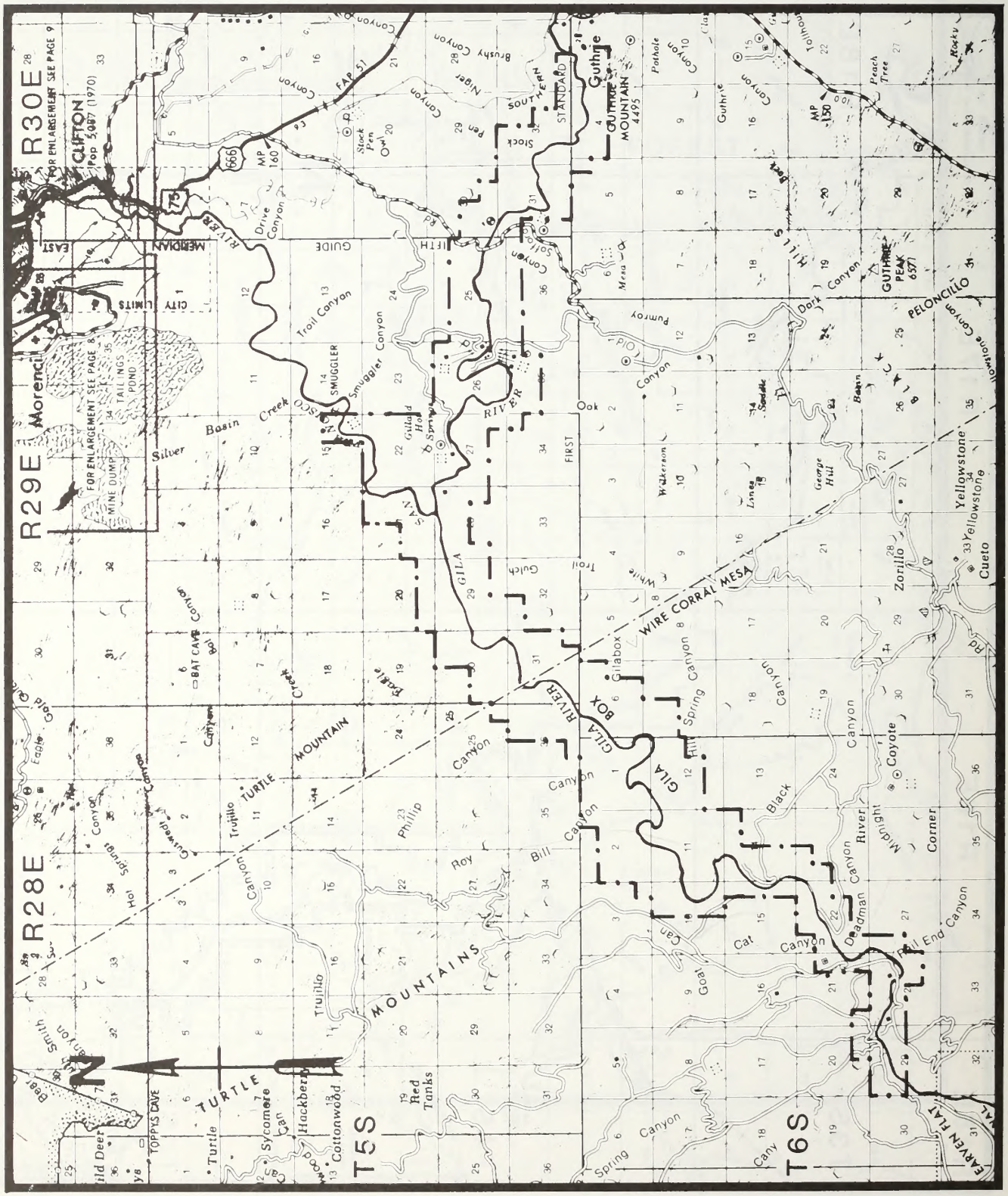
GILA WILD AND SCENIC RIVER

(Gila Box)

MAP 30



ALTERNATIVE B —·—·—

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SCALE IN MILES

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AFFECTED ENVIRONMENT

3

Introduction

Chapter 3 describes the resources that may be impacted by implementing the alternatives, including the *Preferred Alternative*. Descriptions are only as detailed as needed for the reader to understand the effects of implementation. Where impacts are slight or nonexistent (climate, topography, natural history) descriptions are brief or omitted. More detailed descriptions of the resources in the RMP area are available at the Safford District Office. Additional details on some of the resources may be found in the Appendix section of this document.

Setting

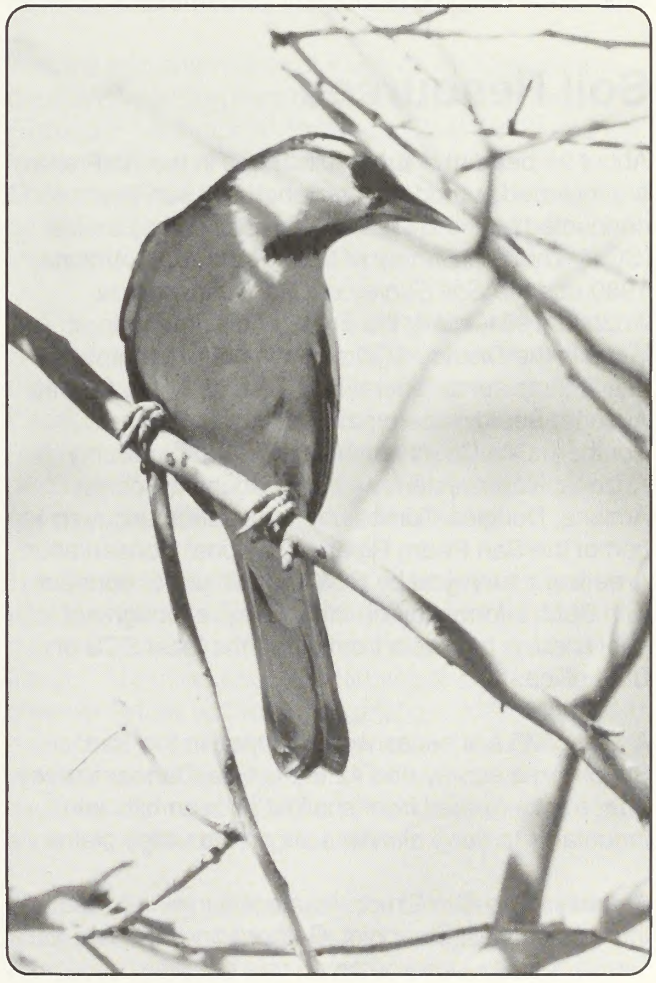
The Safford District is located in southeastern Arizona. See the Safford District RMP/EIS Area map on the inside of the front cover of this document for the location of the District and its boundaries. The planning area for this RMP includes all public lands administered by BLM within the District boundary.

The RMP area lies within the Basin and Range Physiographic Province south of the Colorado Plateau. The area's northwesterly trending mountain ranges reach elevations of nearly 11,000 feet and are separated by broad flat or gently sloping basins. The Gila Mountains and the mountainous area near Clifton represent the transition zone between the Colorado Plateau and the Basin and Range provinces. Among the numerous topographic units are the San Simon, Gila, Sulphur Springs and San Pedro Valleys and the Peloncillo, Dos Cabezas, Gila, Santa Teresa, Chiricahua, Mescal, Galiuro, Dragoon and Mule Mountains.

The entire District is drained by the Gila River and its tributaries with the exception of three areas. These three areas are on the south side of the Dos Cabezas Mountains, the Sulphur Springs Valley and the San Bernardino Valley in the extreme southeastern part of the District.

A limited amount of water quality data has been collected at a number of locations. Water from springs and wells is generally considered suitable for human contact and consumption except where livestock have access to the source. Water in the perennial streams is generally not suitable for human consumption because of high bacterial counts but is usable for human contact (recreation). Most of the reservoirs are used as livestock waters and are not suitable for either human contact or consumption. The Bureau of Water Quality Control, Arizona Department of Environmental Quality, has repeatedly tested the Gila and San Francisco rivers for violations of State water quality standards from mining-related activities. Water quality standards have occasionally been violated (Arizona Department of Health Services 1984.)

Climatic conditions in the RMP area are similar to those throughout the desert Southwest. Alternating lowlands and mountains create abrupt climatic changes over short distances. Higher elevations have cooler temperatures and more precipitation than valleys. Summer days are hot (often above 100 degrees) but usually not unbearable. Average minimum winter temperatures in the higher elevations fall below freezing, and snow is common. Winters in the valleys are relatively mild. Annual precipitation averages 7 to 16 inches in the valleys and 15 plus inches in the mountains, with most of the rainfall in the late summer. Dry conditions are most common from April to July and less severe in the fall. Long, severe droughts occur irregularly and usually last two to five years.



The northern oriole is a common bird in many plant communities in the Safford District.

Air Quality

Air quality over the RMP area is generally good and the ambient air quality is rated Class II by the State of Arizona. Class II standards allow for moderate deterioration of air quality associated with moderate, well controlled industrial and population growth. Sulfur dioxide nonattainment areas are found in the vicinity of Morenci, Globe, Mammoth, Hayden-Winkleman and near the border area of southern Cochise County because of the copper smelters associated with those areas. The District monitors air quality at a monitoring station located in the Gila Valley. Precipitation samples are collected weekly and have consistently been measured at pH 4.7 over a six-year period. This indicates a fairly strong acid rain condition.

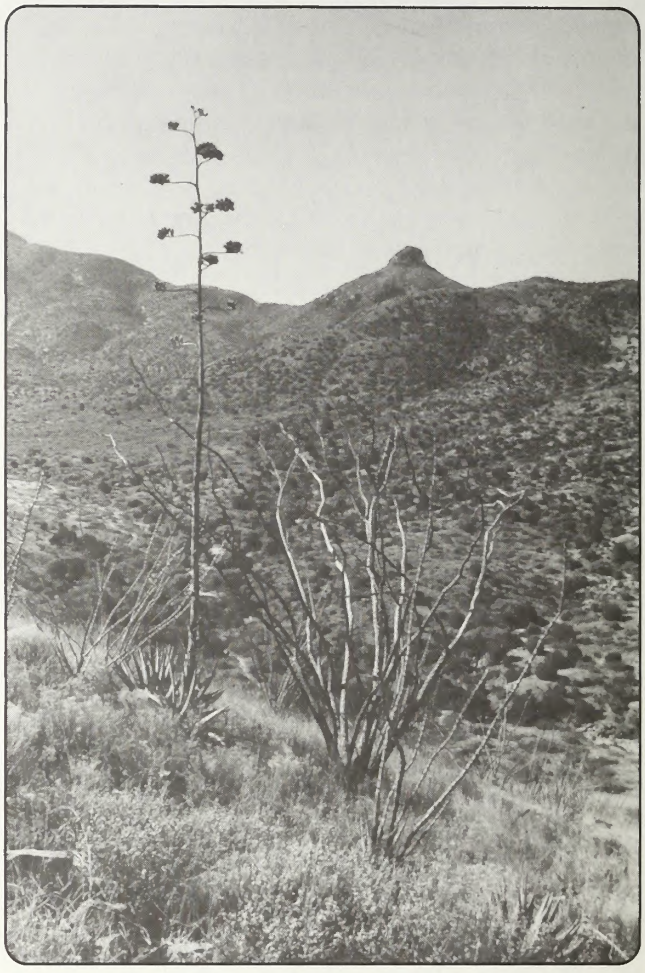
The District does not manage any Class I air quality areas. Four Class I areas, however, lie within or are adjacent to the RMP area. The designated areas are the U.S. Forest Service's Galiuro and Chiricahua Wildernesses and the National Park Service's Saguaro National Monument Wilderness - East and Chiricahua National Monument Wilderness.

Soil Resources

About 95 percent of the public lands in the RMP area are included in modern, published soil surveys conducted by the USDA Soil Conservation Service (SCS). The *Soil Survey of San Simon Area, Arizona*, 1980 and the *Soil Survey of Gila-Duncan Area, Arizona,* 1981, cover the areas of blocked federal lands in the District. SCS surveys not yet completed that include some federal lands are: Graham County, Arizona, Southwestern part; Eastern Pinal and Southern Gila Counties, Arizona; Cochise County, Arizona, Northwestern part; and Cochise County, Arizona, Douglas-Tombstone part. Lands acquired as part of the San Pedro Riparian National Conservation Area were surveyed by SCS in 1987 under contract with BLM. Information on this survey, although not published, is available from either the local SCS or BLM offices.

A total of 35 soil series were mapped in the San Simon Area survey and 42 in the Gila-Duncan survey. These soils ranged from shallow soils on hills and mountains to deep alluvial soils on the valley plains.

Salinity - The San Simon Area soil survey identified three soil series, Bluepoint, Gothard and Pridham, on a total of 24,167 acres that are affected by either excess salts or sodium. These soils all occur in the San Simon Valley.



Ocotillo and agave are two of the many plant species on hillsides surrounding Helen's Dome near Bowie Mountain.

The Gila-Duncan Area soil survey, which covers the Gila Resource Area and the northern portion of the San Simon Resource Area, identified no soils with excess salt or sodium problems, although areas too small to delineate on a map do occur.

Soils information received on the San Pedro Riparian National Conservation Area described no soils with salt or sodium problems. Springs in the St. David Cienega area, however, do produce saline waters that affect or will ultimately affect nearby soils.

Watershed condition in the areas of saline/alkaline soils is generally poor. The soils are generally bare of vegetation cover or plant cover is so sparse that little protection is provided to the soil surface from water or wind erosion. Portions of the Gothard soil unit do

support a cover of alkali sacaton grass that provides some erosion protection. Gothard soils with this type of plant cover are estimated at 1,000 acres.

According to the soil surveys (covering 95 percent of the public land in the RMP area), salinity problems are focused on the San Simon Valley. The only realistic solution to soil salinity problems is to reduce soil erosion and improve watershed conditions to prevent soil salts from migrating downstream.

Erosion - The two published soil surveys identified 49,680 acres of severely eroded soils. These soils are the Glendale, Gila, Guest and Hantz soil series.

The vast majority of the acreage, about 40,000 acres, is in the San Simon Valley from just upstream of the town of Solomon to the town of San Simon at Interstate 10. This area has been recognized since the 1930s as an example of severe erosion. Other areas of major erosion are on Railroad Wash southwest of the town of Duncan and Bear Springs Flat west of the town of Pima. The San Pedro Riparian National Conservation Area contains a few hundred acres of eroded soils on the north end, south of St. David.

The published soil surveys identified 221,030 acres of soils in the San Simon and Bear Springs Flat Watersheds with high susceptibility to wind and water erosion. About 150,000 acres occur on public lands and the remaining acreage is on State and private land. About 100,000 acres of the easily erodible soils are in a poor watershed condition. Vegetation cover is absent or so sparse it doesn't adequately protect the soil surface from wind or water erosion. The remaining 50,000 acres of these soils are in good or excellent watershed condition. Numerous small swales and larger drainages support a healthy cover of tobosa grass providing adequate protection for these soils. If native cover is removed or the soil is disturbed on these acres, severe wind and water erosion may occur. All of these soils occur in a bottom or flood plain position that floods frequently.

The Railroad Wash area, outside of Duncan, is currently improving in watershed condition. Structural treatments and livestock grazing management are working to improve conditions and further structural treatments are not necessary at this time.

The San Simon drainage has been the scene of erosion control efforts, beginning with designation of the San Simon Watershed as a critical watershed in 1936. Water spreading dikes, range seedings and detention dams, both on the main channel and on side channels, have contributed to continuing decreases in soil erosion. Three main-channel and 16 side-channel detention dams, designed to catch soil and fill eroded channels, have been built on the San Simon Watershed. Comparison of aerial photographs taken in 1935, 1953, 1972 and 1978 show that gully formation has decreased on the San Simon watershed as a whole. Over 20,000 acres of rangeland seedings on upland areas have not been successful due to the low rainfall of the areas. Seedings on reclaimed bottomlands have been very successful in terms of erosion control, livestock forage and wildlife habitat development.

With the implementation of livestock management decisions resulting from the *Upper Gila-San Simon Grazing Environmental Statement* (BLM 1978) and the implementation of the *Eastern Arizona Grazing Statement* (BLM 1986), vegetation cover is improving on the watersheds of the Safford District. With an increase in vegetation cover, soil erosion decreases.

The *Upper Gila-San Simon Grazing Environmental Statement* proposed the building of two soil-saving detention dams on the San Simon Watershed. One of these, the Barrier Detention Dam, was built in 1980. Funds have not become available to build the proposed Timber Draw Detention Dam needed to continue rehabilitation of the river channel.

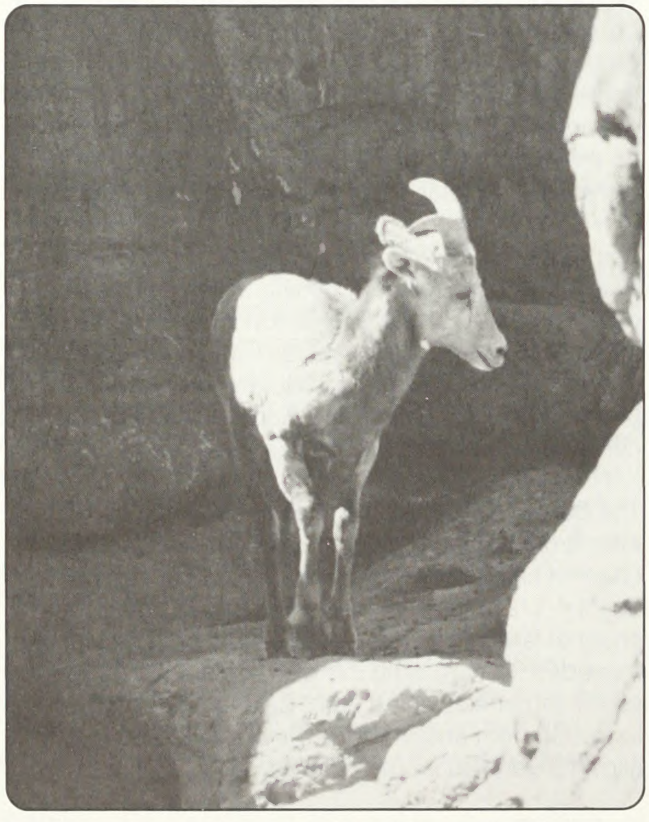
The Barrier Detention Dam has already had significant effects on the San Simon channel. The old eroded channel has been regraded to the natural contour for about 1 1/2 miles and is continuing to build up the channel farther upstream. Vegetation, both natural and reseeded, is increasing the biomass due to the water spreading effects of the dam. Cattle are currently excluded from about 300 acres above the dam to allow for vegetation improvement.

The Bear Springs Flat area in the Gila Resource Area contains highly erosive soils and numerous headcuts. Rangeland seeding and construction of contour dikes and large detention dams have been used to control soil erosion. Each of these approaches has been only minimally successful. The rangeland seeding was a

failure and much of the area only supports annual forbs and grasses to hold the soil. The Oso Largo Detention Dam failed in the floods of October 1983 and funds have not been available for its repair.

The San Pedro Riparian National Conservation Area (NCA) has two areas of accelerated erosion. One is in the northwest part of the NCA near St. David and the other is in the southern part of the NCA near Palominas. Watershed activity plans will be written and work implemented to mitigate the impacts of erosion. Removal of livestock from the NCA for a 15 year period will also help vegetation recover and gullies heal.

Throughout the remainder of the RMP area, watersheds are in generally fair to good condition. Surface rock and vegetation cover protect the soil from erosion. Other actions, such as prescribed burning and livestock and riparian area management, are designed to maintain or improve watershed conditions by increasing vegetation cover. These actions will be used where rough topography or high costs make structural treatments impractical.



A young bighorn traverses the rocky ledges of Aravaipa Canyon.

Water Resources

Surface Waters - The principal surface waters in the District are the Gila, San Francisco and San Pedro Rivers. The Gila and its tributaries drain most of the District except for small parts that drain into the Willcox Playa (a closed basin) near Willcox, Whitewater Draw north of Douglas and the San Bernardino Valley northeast of Douglas.

Tributaries of importance to other resource programs are Redfield, Hot Springs and Bass Canyons and Bonita and Aravaipa Creeks. These tributaries are significant because they are free-flowing, unregulated, high quality streams that sustain high quality riparian and aquatic habitat. They also possess significant recreational values. The three rivers and Aravaipa Creek provide water for agriculture (including livestock grazing), local communities, recreation facilities and mining operations. The other streams have their origin on public lands or the San Carlos Apache Indian Reservation where grazing and dispersed recreation are the major activities affecting water. Except during floods, surface waters in these major tributaries maintain their high quality.

The riparian areas represent rare and unique habitat in the desert Southwest. Human development, overgrazing and extended droughts have significantly reduced the size and number of riparian areas that existed 100 years ago. Riparian areas provide valuable wildlife habitat , recreation opportunities, flood control, water quality, nutrient recycling, oxygen production and scenic values. Riparian areas also promote on-site groundwater recharge, improved watershed and channel conditions and reduced erosion. Riparian areas further serve as migration corridors for wildlife by providing habitat continuity between territories.

There are numerous drainages and springs in the District that provide water for wildlife, livestock and riparian vegetation. Some of these are intermittent streams or have perennial flow for only a short part of their entire length. There are also several thousand stock ponds that provide water for wildlife and livestock throughout the District.

Ground Water - Discussion of groundwater will be restricted to the artesian wells in the San Simon Resource Area because of their diminishing flows and importance to resource management. A total of 10 artesian wells are located in the northern half of the San Simon watershed north of the towns of Bowie and San Simon. Several wells have ceased flowing and most of the remaining wells have diminished flow. Five of the wells were drilled during the mid to late 1920's.

Of these five, one has ceased to flow. The flow data for all of the remaining wells, except for Salt Well, indicates a reduction in flow.

Water Quality - Arizona Department of Health Services (ADHS) in 1984 and the University of Arizona in 1985 investigated and documented the quality of water statewide. That documentation indicated that surface quality is generally good. However, the lack of adequate data is cited as a major hinderance to assessment of water quality in Arizona. Some State and federal surface water quality standards are occasionally in violation, due primarily to intense or long-duration storms, and are the result of non-point pollution sources.

The District has established an on-going water quality testing program within the RMP area. Data collection supports other management programs by providing information to base decisions on current or future management actions, such as Unique Waters nominations, monitoring mining pollution, reintroduction of extirpated fish and livestock management. The testing program involves laboratory analysis of samples from selected sites. Water quality data is collected from various streams, springs and wells and are analyzed for variances from established water quality standards. See Appendix 11 for water quality testing sites.

Unique Waters - Unique Waters is a special designation program of the State of Arizona designed to protect high quality waters associated with exceptional recreational, ecological and wildlife values. The designation requires the submission of a nominating petition with rationales for the nomination and proof of the ability to monitor, maintain and manage the stream segment. The designation is approved by the Arizona Department of Environmental Quality.

The District, in coordination with the City of Safford, submitted a nomination for a segment of Bonita Creek for designation as Unique Waters. The rationale centered on the protection of the City of Safford's water supply and the maintenance and enhancement of the associated unique and unusual attributes, such as riparian habitat, native fish populations, recreational use and wildlife. Over the life of the RMP, data will be collected and analyzed from the remaining streams to determine their suitability as Unique Waters. The streams that meet the criteria will be formally nominated.

Instream Flow Water Rights - Instream flow water rights refers to those rights that can be obtained by submitting an application to appropriate a specified quantity of surface water through the Arizona Department of Water Resources. The application requires specific rationales for granting an instream flow water right, such as the maintenance of fisheries, riparian habitat, recreational use or wildlife. Also required are the establishment of minimum flows and the development of a hydrologic assessment to demonstrate that the requested quantity of water is available.

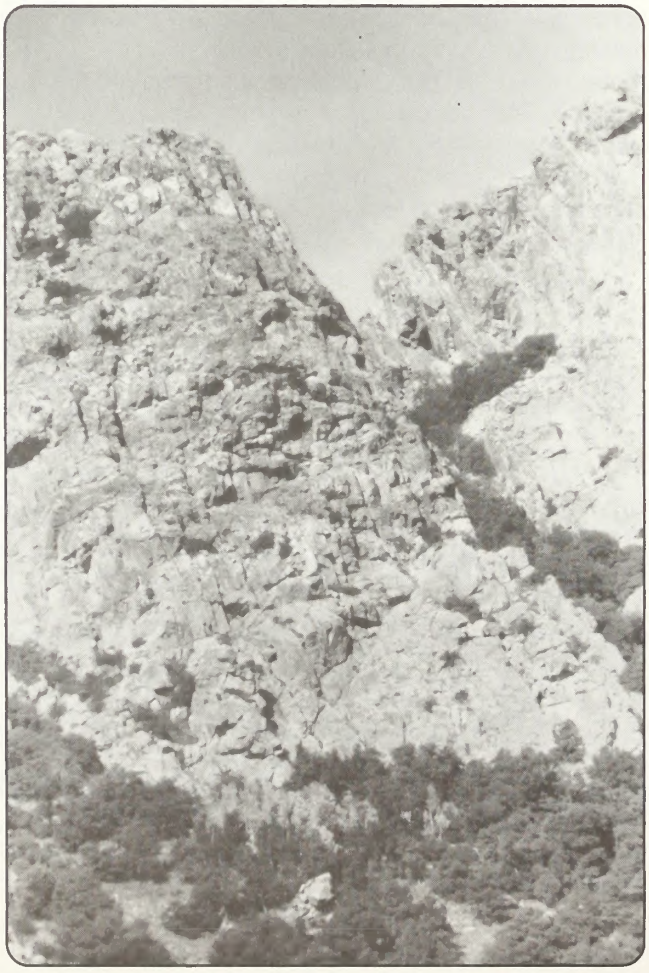
In 1981, the District submitted an application to appropriate an instream flow water right for a segment of Aravaipa Creek. The Arizona Department of Water Resources (DWR) issued a permit in March 1989. DWR is prepared to issue a Certificate of Water Right after submission of five additional years of streamflow monitoring data. Since 1985 the District has submitted nine additional applications for instream flow water rights. These were for segments of the Gila and San Francisco Rivers; Apache, Mescal and Bonita Creeks; and Hot Springs, Redfield, Bass and Swamp Springs Canyons. The rationale for the instream flow water rights for all these streams was to protect riparian habitat, native fish populations, wildlife and recreational use. The District has also acquired the application for an instream flow water right for the San Pedro River from the Huachuca Audubon Society and Sierra Club. Perfecting the water right will provide additional protection for the San Pedro Riparian National Conservation Area.

Bass Canyon is an enjoyable day hike through tree-lined canyons and flowing water.

Geology

General Geology

The Safford District is situated in the southern portion of the Basin and Range Physiographic Province. This province is characterized by nearly parallel mountain ranges that trend north to northwest and are separated by broad valleys filled with sediments. The Basin and Range Province in Arizona is subdivided into a mountain region, including the Safford District, and a desert region occurring in the Sonoran Desert of southwest Arizona. The mountain region contains higher and wider mountains with less extensive alluvial valleys than does the desert region. The mountains of the Basin and Range Province represent blocks of rock bounded by near-vertical normal faults that were upthrown in late Tertiary times. The geology of these mountains is generally complex and variable. The rocks consist mostly of Precambrian phyllites, schists and gneisses; lower to mid-Paleozoic limestones and shales; and volcanic rocks from numerous ages, ranging from Precambrian through late Cenozoic. The geology of the valleys is poorly known because of their sediment cover.



The highly visible Dos Cabezas peaks were a navigational landmark for early settlers.

The Basin and Range Province of Arizona is bounded on the north and east by what is called the Transition Zone. This area separates the Basin and Range Province in the southwestern part of the State from the Colorado Plateau Physiographic Province in the northeastern part of the State. The Transition Zone is a poorly defined band up to about 50 miles wide that, generally, has the rock characteristics of the Colorado Plateau and the complex structural characteristics of the Basin and Range Province. The Colorado Plateau of Arizona "consists of a thick sequence of locally folded or faulted but, generally, flat-lying and undeformed, sedimentary rocks overlying a basement complex of granite and schist. Most of the rocks exposed are upper Paleozoic or Mesozoic age, predominantly sandstone or limestone" (McColly and Anderson 1987).

Economic Geology

Locatable Minerals - Locatable mineral production in the Arizona portion of the Basin and Range Province has been prolific over the years and has played an important role in the development of the State. Major metallic locatable minerals found in the Province, in general order of importance, include copper, gold, silver, lead, zinc, molybdenum, manganese, tungsten and mercury. Non-metallic minerals include asbestos, barite and fluorite. The economic geology of the Province has been summarized by McColly and Anderson (1987) as follows:

> ... mineral deposits occurring within the Basin and Range Province are of many types and sizes... Important resources of copper, gold, silver, lead and zinc are found in Precambrian-age rocks occurring as veins, massive sulfide deposits, or disseminated deposits. Asbestos, iron, manganese, mercury, uranium and pegmatite minerals also are found in Precambrian host rocks.
>
> Paleozoic rocks, in the Arizona Basin and Range Province, are chiefly important for their role as host rocks for post-Paleozoic base and precious metals deposits. Because of their chemical composition, Paleozoic limestones are favored as host rocks and are a primary ore control at a number of Arizona's largest and most important mines.
>
> Mesozoic rocks, including those of Laramide [late Cretaceous] age, are of outstanding economic importance to Arizona mining. Intrusive rocks of this age are associated with nearly all of the larger metal deposits in the Basin and Range Province, as well as many of the smaller ones. Copper, molybdenum, gold and silver are the chief metals recovered from Laramide-age deposits, but lead, zinc and various other metals and mineral

commodities also occur in significant quantities. Laramide-age rocks and associated mineralization are widely distributed in Arizona and where exposed have been extensively prospected.

Locatable mineral potential in the Safford District is evidenced by major producers situated virtually from one end of the District to the other. The Arizona Bureau of Geology and Mineral Technology (Keith et al. 1983) lists 27 mining districts in the Safford District. These districts, their principle commodities, and overall value, as determined by McColly and Anderson (1987), are shown in Table 3-1. A number of small, poorly defined districts are not included with this list; nor are areas with mineral potential that are not organized into districts.

Copper Mountain and Warren are the largest mining districts in the area. The Morenci open pit copper mine in the Copper Mountain District is the nation's largest copper producer, with over a half million tons of copper produced in 1987. The Bisbee Mine in the Warren District is presently a small producer of leached copper but has historically been a major producer. Current exploration and development efforts indicate that the Warren District may again become a major producer. Magma Copper Company's San Manuel Mine in the Mammoth District is the nation's largest underground metal mining operation with a production in 1987 of a quarter million tons of copper. Cyprus Mineral Company's open pit Christmas Mine (Christmas District) is currently inactive but has been a large copper producer. Large tonnages of copper ore occur in the Gila Mountains north of Safford. Phelps Dodge has developed one underground ore body there but ceased mining in 1983. There are currently plans for the development of a large open pit copper mine in the Sanchez District, located about 10 miles northeast of Safford.

Other metal producers are located around Tombstone, Pearce, Dos Cabezas, Ash Peak, Johnson and Aravaipa. Commodities produced include copper, gold, silver, lead and zinc. The industrial mineral zeolite is mined in the San Simon Valley. Most current production comes from non-federal lands, since the lands containing producing mines are generally patented mining claims. Recent mining activity on the public lands, as evidenced by the number of mining plans and notices filed in the Safford District Office since 1981 (when such notification became required), is mostly in the areas of the Aravaipa District, Ash Peak, Christmas District, Copper Mountain, Turquoise Mountain, zeolite deposits north of Bowie, and gold placers scattered around the District (see Map 31).

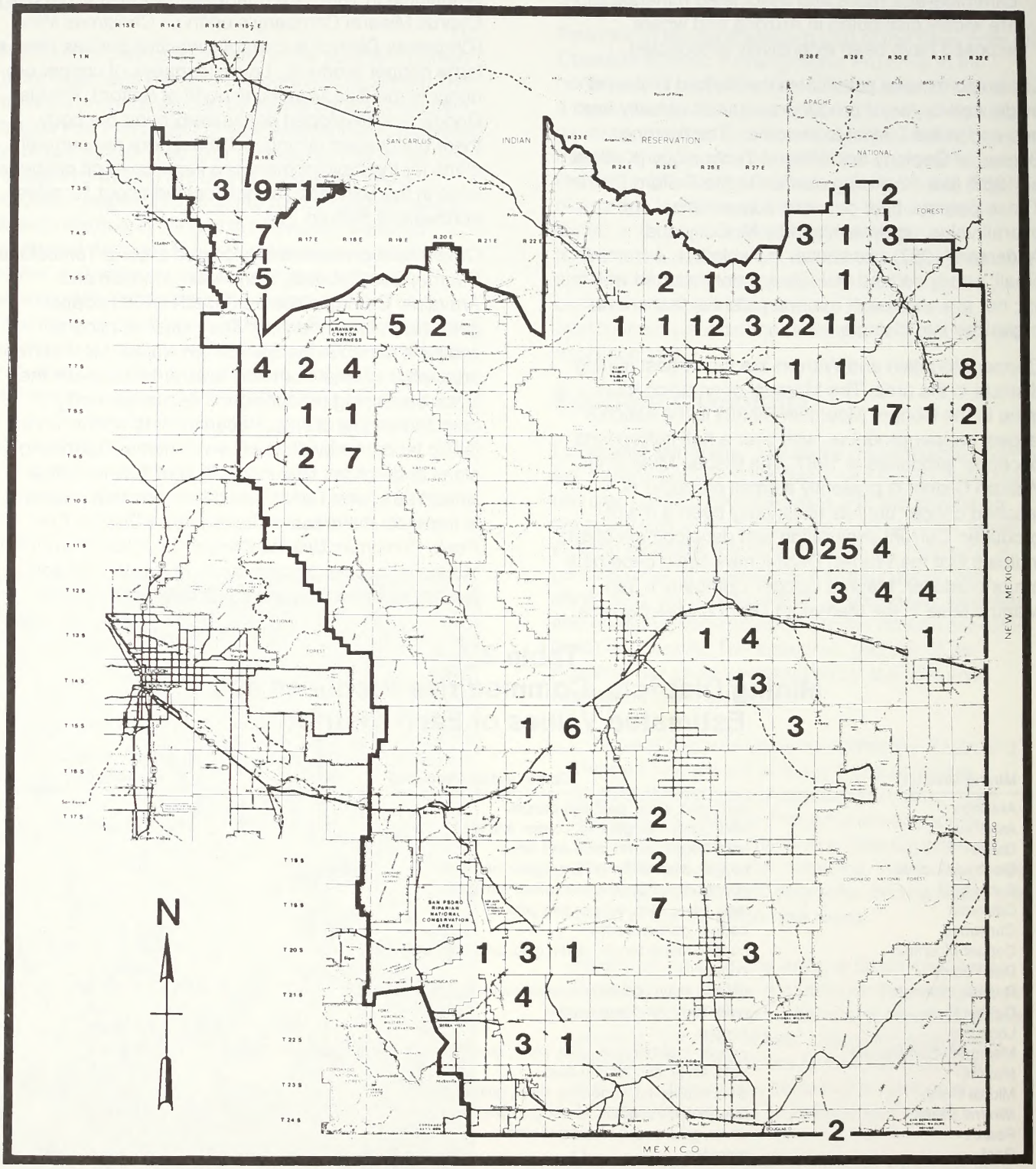
Table 3-1
Mining Districts, Commodities Produced and Estimated Values of Each District

Mining District	Commodities Produced	Estimated Value (in million $)
Aravaipa	lead, zinc, silver, gold and copper	32.5
Ash Peak	silver, gold, manganese, copper and lead	39.5
Banner	lead, copper, silver, gold and zinc	34.8
Bluebird-Cochise	copper, zinc, silver, gold, tungsten and lead	207.1
Bunker Hill	copper-molybdenum, lead, silver and gold	65.1
California	lead, silver, zinc, copper and gold	5.3
Christmas	copper, gold and silver	1,010.1
Copper Mountain	copper-molybdenum, silver, gold, zinc, lead and manganese	25,319.0
Dos Pobres	copper	4,837.4
Dripping Springs	gold, uranium, copper-molybdenum, silver, lead and zinc	2.3
Golden Rule	gold, silver, lead and copper	5.2
Lone Star	copper	4,200.0
Mammoth-San Manuel	copper-molybdenum, gold, silver, lead, zinc, uranium and tungsten	17,713.3
Mascot	gold, silver, copper and lead	14.8
Middle Pass	zinc, copper-molybdenum, silver, gold and lead	7.6
Mineral Creek	copper-molybdenum, silver, gold, lead and zinc	15,504.1
Pearce	silver, gold, copper, lead and zinc	193.9
Reef	tungsten	1.6
Saddle Mountain	copper, silver, gold, lead and zinc	6.2
Sanchez	copper	1,679.6
San Juan	copper and silver	582.3
Summit	copper, silver, gold and lead	15.0
Swisshelm	lead, silver, zinc, copper and gold	11.0
Table Mountain	copper and gold	22.2
Tombstone	silver, gold, lead, copper, manganese and zinc	427.4
Turquoise	copper, silver, gold, lead and manganese	68.1
Warren	copper, gold, silver, zinc, lead and manganese	9,514.5

Source: McColly and Anderson (1987)

MINING PLANS AND NOTICES BY TOWNSHIP

MAP 31



THE NUMBER OF MINING PLANS AND NOTICES RECEIVED FROM JANUARY 1981 – JULY 1989, BY TOWNSHIP

7

0 10 20 30 40

SCALE IN MILES

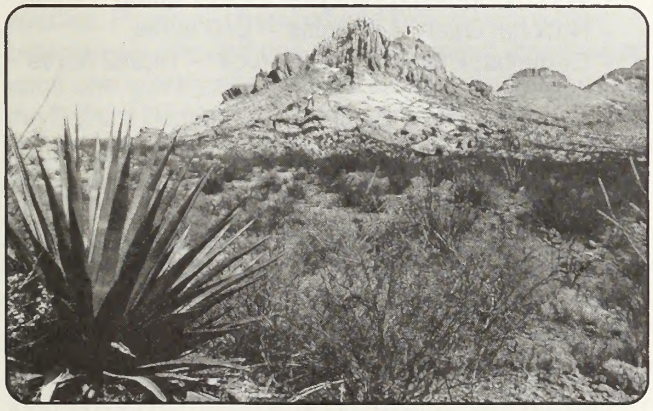
Basemap © Az. Dept. of Trans.

Leasable Minerals - Leasable minerals in the Safford District consist primarily of geothermal energy. The District contains three general areas with geothermal potential as well as several thermal wells and springs. The Clifton-Morenci area contains Arizona's two hottest springs (70° and 82°C). The Safford-San Simon area contains several artesian wells that discharge water up to 49°C. The Willcox area contains wells that discharge water up to 54°C. One well near Pima reportedly produced water at 59°C. The Clifton-Morenci area has been leased for geothermal resources in the past, as has the San Bernardino Valley area. There are currently no geothermal leases in the District.

There are no known commercial reserves of coal, oil or gas in the District. A few deep exploratory wells were drilled in the early 1980s but there has been no activity since. Any oil and gas drilling in the District would have to be considered exploratory. The current economic climate precludes much exploratory drilling by oil and gas companies with no change for the foreseeable future. The only known coal in the area occurs as thin, subeconomic seams of low quality coal on the San Carlos Indian Reservation.

No other significant reserves of other leasable minerals, such as sodium, potassium and helium, are known to occur within the Safford District.

Salable Minerals - Salable minerals in Arizona, such as sand and gravel, stone, clay and pumice "are generally widespread and readily available in most places" (McColly and Anderson 1987). Construction materials, especially sand and gravel, are by far the commodities in greatest demand in the State. Such materials are very common in the District with sand and gravel occurring in virtually every wash and stream. Due to the economics involved in hauling material to the marketplace, most material sites are located within a range of about 10 miles from the point of use.



Desert plants are specially adapted to withstand the hot, dry weather of southeastern Arizona.

Lands and Realty

Exchanges - The Arizona State Land Department (ASLD), through a series of grants, in-lieu selections and exchanges since 1912, has acquired lands that created an intermingled land pattern with the public lands. These land ownership patterns have complicated the resource management programs of both agencies. In a cooperative effort to remedy this management problem, a Memorandum of Understanding was signed by BLM and ASLD in March 1985 to initiate a joint land exchange program.

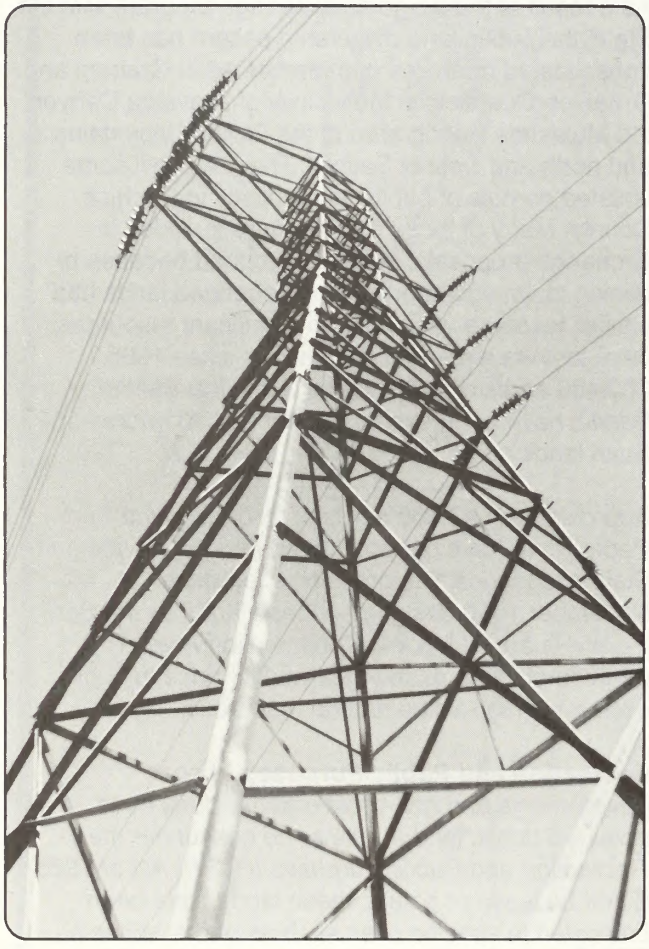
As a result of the on-going exchange program with the State, the public land ownership pattern has been consolidated northeast of Interstate 10 in Graham and Greenlee Counties; in the vicinity of Aravaipa Canyon; the Muleshoe Ranch area of the Galiuro Mountains; and north and west of Safford. There are still some isolated parcels of public land, mostly in Cochise County. Many of these parcels were included in exchange proposals, but were dropped because of mining claim encumbrances. Exchanged lands had similar resource values so no significant resources were lost. As a result of exchanges since 1985, 202,406 acres of public lands within the Safford District have been exchanged for 214,731 acres of State lands.

Approximately 47,668 acres of land along the San Pedro River have been acquired through private and State exchanges. Congressional legislation in November 1988 designated these lands as the San Pedro Riparian National Conservation Area. The purpose of these exchanges was to place in public ownership high-value natural resources.

Recreation and Public Purposes - Local governments and non-profit organizations have acquired public land at little or no cost under the *Recreation and Public Purposes (R&PP) Act of 1926*. Either by lease or patent, these lands have been dedicated to specific uses such as parks, schools, landfills or shooting ranges that benefit the public at large. Five parcels of land have been patented (totalling 399 acres) and nine leases issued (totalling 877 acres) under the R&PP Act during the last 10 years.

Sales - There have been some sales of public land within the District. Some tracts are better suited, often because of location, for private owner- ship rather than public. The sale parcels have not been large, the largest in recent years being 80 acres. The District has sold 14 parcels of land, totalling 847 acres, during the last 10 years.

Communications Sites - Three major communication sites are currently being utilized, all within the San Simon Resource Area. The most developed is the Guthrie Peak site, located in the Black Hills east of Safford, supporting 10 primary right-of-way holders. The other two sites, Mule Mountain/Juniper Flats north of Bisbee, and Dos Cabezas east of Willcox have fewer holders. A communication site plan for Guthrie Peak is under development that will dictate the level of development for that site. No immediate projects are pending for the development of site plans for the Dos Cabezas and Mule Mountain/Juniper Flats sites.



Under the proposed RMP, right-of-way corridors will be established to minimize impacts in sensitive areas.

Rights-of-Way, Utility and Transportation - Rights-of-way for utility and transportation facilities have been granted to qualified individuals, businesses and governmental entities. Issuance is based on identified need and stipulations to protect natural and cultural resources are provided to the applicant. The District has approximately 608 active rights-of-way involving such uses as power transmission/distribution facilities, roads and highways, communication sites, telephone lines, irrigation and water facilities, oil and gas pipelines, federal facilities and railroads.

Major transportation and utility system rights-of-way crossing the RMP area are Arizona Electric Power Cooperative, Inc. and Tucson Electric Power Co. transmission lines, and All American Pipeline and El Paso Natural Gas Co. pipelines. Interstate Highway 10 crosses the entire District from east to west.

No formal utility corridors have been established. Corridors are often desirable to provide the private sector with secured routes for project planning purposes. Section 503 of FLPMA requires that in order to minimize adverse environmental impacts and a proliferation of separate rights-of-way, corridors will be used to the extent practical.

Withdrawals - Certain lands within the District have been withdrawn. Withdrawals close public land to sales, settlement, location and entry. They limit use to maintenance of public values or reserve it for a particular public use or program. Withdrawals can also transfer jurisdiction of public land to another federal agency.

The following withdrawals are in effect in the Safford District (some of these are multiple withdrawals in the same area and some are overlapping withdrawals):

- Power Site Reserve 602 and Secretarial Order-Water Power Designation - 2,277 acres
- Power Project -- 3,310 acres
- Middle Gila River Project -- 804 acres
- San Carlos Irrigation Project (3 withdrawals) -- 9,383 acres
- Power Site Reserve 153 (2 withdrawals) -- 3,399 acres
- Power Site Reserve 590 and Secretarial Order-Water Power Designation -- 2,023 acres
- National Guard - Safford -- 400 acres
- Charleston Dam and Reservoir (2 withdrawals) -- 1,989 acres
- Ft. Huachuca and Electronic Proving Grounds (4 withdrawals) -- 19,599 acres
- Willcox Bombing Range -- 27,277 acres
- National Guard - Douglas -- 640 acres
- Camelback Dam and Reservoir -- 14,592 acres

Wildlife Habitat

The Safford District has a rich, diversified terrestrial wildlife fauna consisting of over 300 species of birds, 40 species of herptiles and 80 species of mammals. The existence of these species is due to the habitat diversity present throughout southeastern Arizona. These terrestrial habitats range from the low rainfall Chihuahuan Desert found in much of the southern portions of the District to the moderate rainfall-moderate elevations of the more mountainous regions.

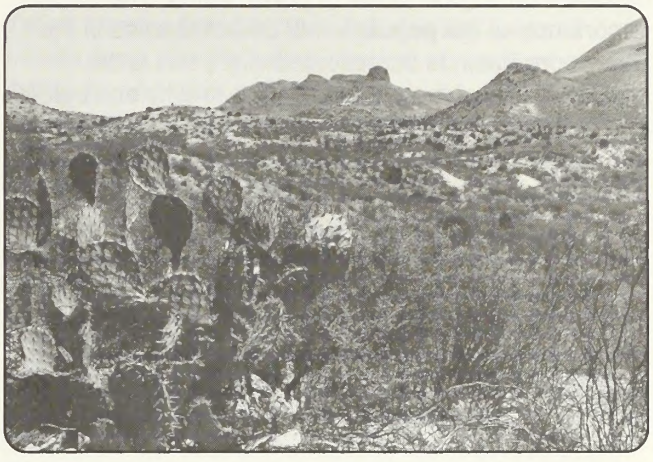
Animal species receiving highest priority for funding and habitat improvement projects are: 1) federally listed threatened or endangered species; 2) priority wildlife species as identified by the Bureau in cooperation with the Arizona Game and Fish Department (AGFD); and 3) other species, habitats or features of local importance.

Riparian/Aquatic Habitat - In Arizona, 60 percent of wildlife and fish species are dependent upon riparian and aquatic habitats. Twenty-eight priority species or communities require riparian/aquatic areas. They are the Colorado squawfish, Gila topminnow, desert pupfish, woundfin, loach minnow, spikedace, Gila chub, Gila roundtail chub, razorback sucker, bald eagle, western yellow-billed cuckoo, gray hawk, Mississippi kite, zone-tailed hawk, common black hawk, willow flycatcher, belted kingfisher, osprey, spotted owl, ferruginous pygmy-owl, white-faced ibis, Chiricahua leopard frog, plains leopard frog, Mexican garter snake, black bear, turkey and waterfowl. Protection and management of this biological diversity is linked to the 0.5 percent of the land that is riparian and aquatic habitat. Its ecological value is far greater than its proportionate size, and BLM has set a national goal of having 75 percent of its riparian habitat in good or excellent condition by 1997.

The larger aquatic habitats found in the District are the Gila, San Francisco and San Pedro Rivers, Aravaipa and Bonita Creeks. There are numerous smaller streams, providing isolated aquatic habitat throughout the District. In addition, ponds and springs are important local habitat for some of the 30 species of fish found on public lands.

Because so many priority species and communities are dependent upon the quality and quantity of these small ecosystems, management efficiency can be enhanced by concentrating attention on riparian and aquatic habitat rather than by managing for individual species. Physical, chemical and biological linkages between aquatic and riparian areas mean that impacts upon one quickly affect the others. Riparian areas in the Safford District also are important migration corridors through Arizona's deserts for birds moving between tropical wintering areas and breeding areas farther north. The value of riparian habitat extends beyond District, State or national boundaries.

Priority Species with Non-specific Habitats - Priority species and features with non-specific habitat requirements include the peregrine falcon, Sanborn's long-nosed bat, Mexican long-tongued bat, red bat, ferruginous hawk, mountain lion, javelina, quail, dove and maternal bat caves. These priority species and features are so widespread or use so many plant communities that management focus is difficult. Generally, good land management practices that balance uses with long-term production, plus standard stipulations on mining actions, provide good protection. Because of the large area occupied, projects are seldom constructed solely for one of these species. Their needs are, however, incorporated into the design and development of all proposed actions.



The desert vegetation of the uplands is quite different than the riparian vegetation below in Guadalupe Canyon.

Peregrine falcons, Mexican long-tongued bats, red bats and Sanborn's long-nosed bats have very specific breeding sites and feeding areas that can be protected by specific Bureau actions. They do, however, forage in a wide area throughout the District at other times of the year. Javelina, mountain lions, quail and dove are present virtually throughout the District at varying densities. They are important either as an important component of the ecosystem, an economic impact upon the livestock industry, or for recreational activities.

Ferruginous hawks, a federal candidate species, are present in the District during migration and wintering periods. The wide range and non-specific habitat use precludes specific management prescriptions. They feed upon small mammals, therefore, Bureau management programs that maintain early successional communities favored by rodents, benefit ferruginous hawks.

Maternal bat caves are irregularly located throughout the District. The Bureau will protect this habitat feature where it is identified.

Priority Species with Specific Habitats - Priority species with specific habitat requirements include the desert tortoise, bighorn sheep, mule deer, white-tailed deer, Montezuma quail, wild turkey, black bear, pronghorn antelope and Texas horned lizard.

Desert tortoises are restricted to Sonoran Desert areas in the lower San Pedro River Valley. Plant communities used include palo verde-cactus, desert grasslands and some open chaparral or encinal (oak woodland) patches with southerly exposures. Desert washes appear to be especially important. Systematic transects to determine the range and abundance of the species were begun in 1988. Tentative results indicate desert tortoise may occur at low to moderate densities on 25,000 acres of public lands. The importance of the population of desert tortoise in the San Pedro basin is complicated since this is the northeast limit of the species' range and its ecological and biological value may not be proportional to its apparent low numbers. Habitats will be categorized by densities and management options and will be protected to the degree required by Bureau policy. Preliminary observations indicate perennial grasses, low shrubs or annual grasses and forbs are important food items depending upon habitat and time of year. A critical feature throughout the District seems to be the presence of natural dens, common along desert washes.

Two subspecies of bighorn sheep exist on lands administered by the Safford District. The Rocky Mountain bighorn is found in suitable habitat along the Gila and San Francisco Rivers from Bonita Creek on the west to the New Mexico state line on the east. Desert bighorn sheep are found in three major places in the northern part of the District. The largest population, of 150-200 or more sheep, is found in and around Aravaipa Canyon Wilderness. A smaller population, 50-100 sheep, is found in the Galiuro Mountains around the Muleshoe Ranch and Redfield Canyon areas. The smallest population, consisting of less than 50 individuals, is located in the Peloncillo Mountains in the east-central part of the District. Habitats preferred by bighorn sheep are remote, relatively open, precipitous areas with rocky ridges, slopes and canyons. Preferred foraging areas are mostly found within the above mentioned habitats. These foraging areas consist of upland and mountain grasslands, with scattered trees and shrubs. Threats to bighorn sheep include habitat degradation or loss, predators, disease, poaching and human activities.

Desert mule deer occur throughout the District and are the most common big game species. Areas of highest concentrations are the Galiuro, Peloncillo, Dos Cabezas and Mule Mountains. Concentrations range from five to seven deer per square mile (Arizona Game and Fish Department 1988). Mule deer prefer semi-arid, sparsely vegetated areas dominated by shrubs, such as mesquite, spicebush and oak, and scattered juniper and/or oak trees. These preferred habitats are found most often in the rolling hills and open mountain areas. There is some habitat overlap between mule deer and white-tailed deer in the Dos Cabezas, Chiricahua and Mule Mountains. The major threats to mule deer are habitat degradation and loss.

The white-tailed deer prefer the oak woodland habitat dominated by oak and juniper trees with scattered shrubs, forbs and abundant perennial grasses. Areas of the highest densities are the Galiuro, Chiricahua, Santa Teresa and Mule Mountains. White-tailed deer populations are considerably lower than those of the mule deer with densities ranging from two to four deer per square mile on these better habitats.

Montezuma quail prefer grassy, open, oak woodland canyons and wooded mountain slopes with bunchgrass. The best habitat available is in the Dos Cabezas, Chiricahua, Mule and Galiuro Mountains. The major threat to the existing populations is loss of high quality perennial grasses in oak woodland plant communities.

Wild turkeys prefer oak woodland habitat with nearby riparian vegetation in the mountains of southeast Arizona. Suitable habitat is available in the Dos Cabezas, Chiricahua, Gila, Santa Teresa, Winchester, Galiuro and Mule Mountains. The only verified presence of turkeys in the Safford District, however, are in Bonita Creek and Guadalupe Canyon. Turkeys have been observed on Forest Service lands adjacent to the District in the upper San Francisco River area.

The current population of turkey is estimated to be very low. There is an opportunity to reintroduce the Gould's turkey into suitable habitat in several mountain areas.

In the Southwest, black bears prefer mountainous vegetated areas of chaparral, pinyon-juniper and oak woodlands. Black bears are very adaptable and may be found in all habitats of the oak woodland vegetation types, especially when adjacent to riparian vegetation. The population of black bears is estimated to be moderate to low in these types. Bear numbers are dependent on the condition of oak woodland and adjacent riparian areas and will vary according to long term management strategies.

Pronghorn antelope inhabit the semi-desert grasslands in southeast Arizona. Habitat preference is for open grasslands with scattered shrubs and moderate to high densities of forbs. A small population of pronghorn antelope exists in this habitat on the east slopes of the Peloncillo Mountains along the Arizona-New Mexico border. Pronghorns move unrestricted between the two states in this habitat. In December 1986, 37 pronghorn were released east of the Peloncillo Mountains to supplement the small, declining population of approximately 15 animals. The present population consists of 50 to 60 individuals. Suitable but unoccupied habitat exists in several small areas in the extreme southeastern portion of the District and around the Galiuro Mountains. Threats to pronghorn include disease, poaching, predation and human developments. The small number of animals increases their vulnerability to these threats.

Texas horned lizard habitat includes dry areas in mostly open country with loose soil supporting grass, mesquite and cactus. These lizards appear to be common in parts of the District. Few surface disturbances are so widespread as to jeopardize blocks of habitat, and preferred habitat is seldom exposed to major disturbances except by mining and livestock grazing. No specific efforts have been made for management of this species.

Threatened, Endangered and Special Status Species - A number of threatened, endangered and special status species are found on public lands in the Safford District. Table 3-2 lists the species and their status.

Table 3-2
Threatened, Endangered and Special Status Wildlife Species

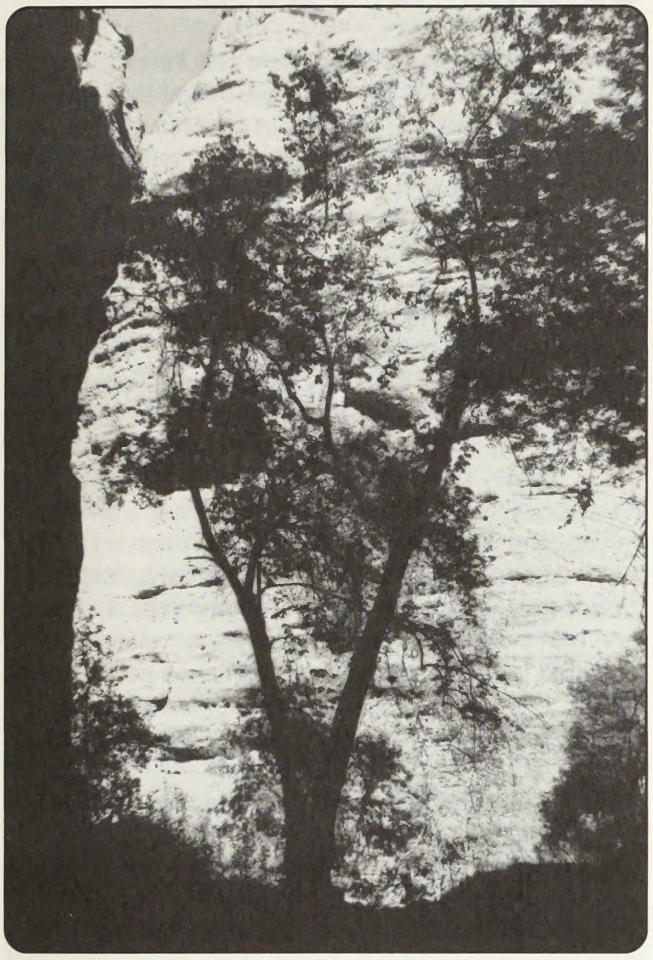
Common Name	Scientific Name	Status		
		Safford	Federal	State
MAMMALS				
red bat	*Lasiurus borealis*	B	-	C
spotted bat	*Euderma maculatum*	?	2	C
southwestern cave myotis	*Myotis velifer brevis*	O	2	-
California leaf-nosed bat	*Macrotus californicus*	A	2	C
Sanborn's long-nosed bat	*Leptonycteris sanborni*	O	E	E
Mexican long-tongued bat	*Choeronycteris mexicana*	O	2	T
greater western mastiff-bat	*Eumops perotis californicus*	O	2	-
grizzly bear	*Ursus arctos*	Ex	T	E
Chiricahua western harvest mouse	*Reithrodontomys megalotis arizonensis*	O	2	-
jaguar	*Panthera onca*	A	E	E
jaguarundi	*Felis yagouaroundi tolteca*	Ex	E	-
ocelot	*Felis pardalis*	Ex	E	E
river otter	*Lutra canadensis sonora*	Ex	2	E
Arizona black-tailed prairie dog	*Cynomys ludovicianus arizonensis*	Ex	2	E
Chihuahuan pronghorn	*Antilocapra americana mexicana*	B	-	T
Arizona shrew	*Sorex arizonae*	?	2	C
Mexican gray wolf	*Canis lupus baileyi*	Ex	E	E
BIRDS				
American bittern	*Botaurus lentiginosus*	W	-	C
least bittern	*Ixobrychus exilis*	M	-	C
bobolink	*Dolichonyx oryzivorus*	A	-	E
crested caracara	*Polyborus plancus*	A	-	C
gray catbird	*Dumetella carolinensis*	A	-	T

Table 3-2
Threatened, Endangered and Special Status Wildlife Species (cont.)

Common Name	Scientific Name	Status		
		Safford	Federal	State
BIRDS (cont.)				
whooping crane	*Grus americana*	A	E	-
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	B	-	T
long-billed curlew	*Numenius americanus*	M	2	-
black-bellied whistling duck	*Dendrocygna autumnalis*	O	-	C
bald eagle	*Haliaeetus leucocephalus*	B	E	E
great egret	*Casmerodius albus*	M	-	E
snowy egret	*Egretta thula*	M	-	E
northern aplomado falcon	*Falco femoralis septentrionalis*	Ex*	E	E
American peregrine falcon	*Falco peregrinus*	B	E	C
southwestern willow flycatcher	*Empidonax traillii extimus*	B	2	E
Apache northern goshawk	*Accipiter gentilis apache*	A	2	C
common black hawk	*Buteogallus anthracinus*	B	-	C
ferruginous hawk	*Buteo regalis*	W	2	T
northern gray hawk	*Buteo nitidus maximus*	B	2	T
violet-crowned hummingbird	*Amazilia violiceps*	O	-	C
white-faced ibis	*Plegadis chili*	M	2	-
thick-billed kingbird	*Tyrannus crassirostris*	B	-	C
tropical kingbird	*Tyrannus melancholicus*	M	-	C
belted kingfisher	*Ceryle alcyon*	W	-	C
Mississippi kite	*Ictinia mississippiensis*	B	-	C
osprey	*Pandion haliaetus*	M	-	T
cactus ferruginous pygmy-owl	*Glaucidium brasiliarum cactorum*	B	2	E
spotted owl	*Strix occidentalis*	O	2	T
thick-billed parrot	*Rhynchopsitta pachyrhyncha*	R	E	E
Sprague's pipit	*Anthus spragueii*	W	-	C
western snowy plover	*Charadrius alexandrinus nivosus*	M	2	C
American redstart	*Setophaga ruticilla*	M	-	T
wood stork	*Mycteria americana*	A	E	-
Baird's sparrow	*Ammodramus bairdii*	W	-	T
elegant trogon	*Trogon elegans*	M	-	C
HERPTILES				
Chiricahua leopard frog	*Rana chiricahuensis*	?	-	T
lowland leopard frog	*Rana yavapaiensis*	O	2	C
plains leopard frog	*Rana blairi*	?	-	E
Mexican garter snake	*Thamnophis eques*	B	2	C
Texas horned lizard	*Phrynosoma cornutum*	B	2	-
Sonoran tiger salamander	*Ambystoma tigrinum stebbinsi*	?	2	E
desert tortoise	*Gopherus agassizii*	B	2	C
FISH				
bonytail chub	*Gila elegans*	Ex	E	E
Gila chub	*Gila intermedia*	B	2	T
Gila roundtail chub	*Gila robusta grahami*	B	2	T
loach minnow	*Tiaroga cobitis*	B	T	T
desert pupfish	*Cyprinodon macularius macularius*	B	E	E
spikedace	*Meda fulgida*	B	T	T
Colorado squawfish	*Ptychocheilus lucius*	Ex	E	E
razorback sucker	*Xyrauchen texanus*	O	1	E
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	B	E	T
woundfin	*Plagopterus argentissimus*	Ex*	E	E

A = Accidental
B = Breeds on BLM
C = Candidate for State listing
E = Endangered
Ex = Extirpated
M = Migrant
O = Known occurrence
R = Reintroduced
T = Threatened
W = Winter Resident
? = Probable
* = Proposed for reintroduction
1 or 2 = Candidate for Federal listing

Source: Safford District Files



Ash and other riparian trees provide shade for hikers in Aravaipa Canyon Wilderness

Livestock Grazing

Livestock grazing is managed through allotment management plans (AMPs), most of which were developed from decisions resulting from the *Upper Gila-San Simon Grazing EIS* (BLM 1978) and the *Eastern Arizona Grazing EIS* (BLM 1986). These AMPs were written for a specific unit of rangeland (allotment) based on multiple-use resource management objectives established through existing land use plans and activity level plans by resource specialists and permittees. An AMP establishes objectives, seasons of use, grazing system, numbers of livestock permitted on the range, range improvements, monitoring plans and evaluation procedures for the allotment.

The District range program manages 129,037 animal unit months (AUMs) of authorized active use and 10,150 AUMs of non-use in 262 allotments. There are 109 allotments being managed under the guidelines of an implemented AMP. Priorities for management of livestock use are determined through the use of an allotment categorization process that helps determine the priority of management emphasis. There are currently 60 allotments in the "Improve" category, 37 in "Maintain", and 165 in "Custodial". These categories are defined as follows:

Improve (I) Category criteria
- Present range condition is unsatisfactory and/or needs improvement.
- Allotments have moderate to high resource production potential and are producing at low to moderate levels.
- Serious resource-use conflict and/or controversy exists.
- Opportunities exist for positive economic return from public investments.
- Present management appears unsatisfactory and/or needs improvement.

Allotments in the "I" category require either a change in management practices to improve conditions and achieve a relatively high resource potential or mitigation of serious resource conflicts.

The management objectives for "I" allotments are to improve current resource conditions or resolve conflicts. Therefore, "I" allotments will have first priority for range improvement funding, AMP development, monitoring and use supervision.

Range condition, trend and precipitation will be monitored on all "I" allotments. Utilization and actual livestock use will be monitored on the allotments that receive livestock grazing use. Other studies to monitor water and wildlife habitat will also be conducted.

Maintain (M) Category criteria
- Present range condition is satisfactory.
- Allotments have moderate or high resource production potential and are producing near their potential (or trend is moving in that direction).
- No serious resource-use conflict/controversy exists.
- Opportunities may exist for positive economic return from public investments.
- Present management appears satisfactory.

Generally, allotments in the "M" category have no serious resource conflicts and range conditions and present management are satisfactory. The management objective for "M" allotments is to maintain current resource conditions. Range condition and trend, precipitation and actual livestock use will be monitored on "M" allotments by priority ranking as funding permits. "M" allotments will have second priority for funding of range improvements and for AMP development.

Custodial (C) Category Criteria

- Present range condition is not a factor.
- Allotments have low resource production potential and are producing near their potential.
- Limited resource-use conflict/controversy may exist.
- Opportunities for positive economic return on public investment do not exist or are constrained by technological or economic factors.
- Present management appears satisfactory or is the only logical practice under existing resource conditions.

Allotments in the "C" category include those with a small percentage of public land or those with low resource potential where response to management would not yield positive economic returns. The management objective for this category is to employ minimum management on the allotments while protecting existing resource values.

Permittees will assume a major role in range monitoring and range improvement construction for "C" allotments. BLM will conduct periodic use supervision on these allotments.

Currently, the District is heavily involved in monitoring allotments to determine the success of meeting AMP objectives. Monitoring is described in the *Safford District Monitoring Plan* (BLM 1978 and BLM 1986) and more specifically in completed AMPs. Included in the monitoring program are livestock counts, trend and utilization studies and precipitation data.

Cultural Resources

Cultural resources are identifiable cultural properties and any traditional lifeway value. Cultural properties are the nonrenewable remains of past human activity and consist of either: (1) manufactured items such as stone tools, pottery, fire hearths, buildings, works of art, etc.; (2) non-manufactured items used by people in their natural state such as rock shelters for housing purposes, or the skeletal remains of an animal that had been butchered by a prehistoric hunter; (3) areas where significant human events occurred - even though evidence of the event no longer remains; and (4) the natural environment immediately surrounding the actual resource (BLM Manual 8100).

A traditional lifeway value is another group's shared values. These values are useful in or important to the maintenance of a specified social and/or cultural groups traditional system of (1) religious belief, (2) cultural practice or (3) social interaction, not closely identified with definite locations. Because traditional lifeway values are abstract, nonmaterial, ascribed ideas, one cannot know about them without being told.

Cultural resources are viewed as part of the history of humankind. Since we cannot learn about past traditional lifeway values without public participation, cultural properties serve as our only link for understanding these nonrenewable resources. To facilitate their discussion, cultural properties are commonly classified according to the cultural period or tradition they represent. A common scheme used in the Southwest classifies cultural resources as being associated with either the: 1) Paleoindian Period; 2) Archaic Period; 3) Southwestern Cultural Traditions; 4) Protohistoric Period; 5) Historic Period; or 6) Contemporary Period.

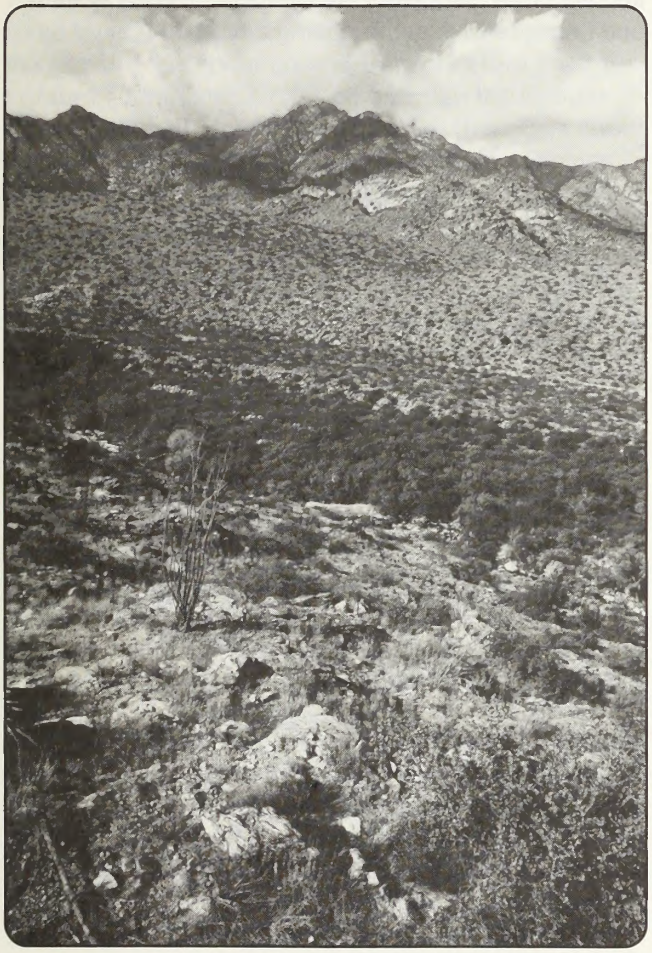
Paleoindian Period - This cultural tradition refers to the original New World inhabitants who migrated into North America from Asia during the closing of the Pleistocene, or last great ice age. Most researchers date this period from circa 10,000 B.C. to circa 8,000 B.C. The Paleoindian lifeway was shaped by a highly nomadic existence wherein small social groups or bands would forage the countryside in pursuit of animal and plant resources.

Sites of Paleoindian activity are often extremely difficult to recognize due to the sparseness characterizing the physical remains of highly nomadic hunters and gatherers. Recognition is further hindered by geological and other natural processes that, in the course of several thousand years, can hide or obliterate even the most highly visible cultural property or archaeological site.

Although Paleoindian sites are extremely rare, the San Pedro River Valley has produced the largest known concentration of such sites in North America. Most of the San Pedro sites have been interpreted as being kill sites where animals, particularly mammoth, were felled and butchered. Several of these sites are considered to be of world-class status because of the information they contain about early man in North America.

Evidence of these big-game hunters is characteristically associated with the presence of the distinctively shaped Clovis spear point. Usually these spear points are found alongside other stone tools and the bones of extinct Pleistocene mammals that are buried beneath soils marking the geological end of the Pleistocene Age in the Southwest.

The significance of Paleoindian sites is that they contain rare information regarding the peopling of the New World and man's adaptation to a postglacial environment.



The Fishhooks WSA in the Gila Mountains is recommended for wilderness designation.

Archaic Period - The Archaic Period is believed to have occurred from at least 8,000 B.C. to about 100 A.D. During this period people lived a more settled lifestyle than previously and only hunted modern species of game animals. They also developed a reliance on gathering wild plants and, toward the end of this period, began to domesticate plants such as corn, beans and squash. This reliance on vegetal resources is evidenced by milling tools used for grinding seeds into edible flour and the presence of food storage pits inside the remains of brush houses.

Recognition of Archaic sites from surface observations can be extremely difficult due to their age and lack of distinctively shaped projectile point types and other kinds of diagnostic artifacts. Because of this, it is difficult to determine how many of the known archaeological sites in the District can be attributed to the Archaic Period.

The Archaic sites known to exist in the District are in fairly good condition due, in part, to their relatively unimpressive nature, which usually consists of small surface scatters of stone tools and chipping debris. Buried sites are threatened principally by erosion. Archaic sites located in rockshelters and caves are likely to be damaged by vandals searching for burial goods, basketry, sandals and other artifacts.

Archaic Period sites are significant in that they represent the most enduring adaptational period of man's occupation in the New World. These sites fill a data gap bridging the transition from nomadic big-game hunting to settled village life and agricultural dependency.

Southwestern Cultural Traditions - At about 100 A.D. prehistoric societies in the Southwest began to undergo dramatic changes in response to adopting an agricultural way of life based upon a primary food complex of corn, beans and squash. The reliance upon these and other crops allowed these people to spend most of their time in one place. This new lifestyle was marked by wide-scale population increase, establishment of numerous villages with large agricultural fields and complex irrigation systems, the development of extensive trading networks and regional trading centers, and an elaboration of ceremonial and religious life.

The basic population groups taking part in these cultural developments were the Mogollon, Hohokam and Anasazi. A fourth cultural group, known as the Salado Complex, appears late in the period and probably represents a restructuring of the three existing traditions. By 1450 A.D. these developments ceased and native groups suffered extensive culture collapse.

This was followed by wide-scale population abandonment and the disappearance of whole societies.

Cultural groups during this period are distinguished from each other on the basis of certain diagnostic traits particularly in architecture and ceramics. Mogollon affiliated sites outnumber the others in the District and tend to be located in mountainous contexts and in valleys alongside major drainages and terraces. Many of the so-called Mogollon sites along major drainages display Hohokam characteristics as well, especially in those that date toward the latter part of the period.

Researchers believe these Mogollon-Hohokam "blended" sites show that intense trading relationships existed with the Hohokam people from the Phoenix and Tucson areas. The major trading frontiers appear to have been along the Gila and San Pedro Rivers. The Tres Alamos site along the San Pedro River, in part, appears to have been a major Mogollon-Hohokam regional trading center.

Bonita Creek Canyon, located northeast of Safford in the Gila Mountains, is the only area in the District known to contain properties that display Anasazi characteristics. Located along Bonita Creek are numerous cliff dwellings, elaborate rock art paintings and at least one ceremonial cave. This assemblage of sites represents one of the most dense and varied collections of cultural properties in the District.

Properties displaying Salado characteristics occur primarily as villages with associated agricultural fields along the Gila and San Pedro Rivers. Most Salado villages have been destroyed by historic and modern farming practices. Relatively little is known about the Salado Complex; it remains somewhat of a puzzle to archaeologists in the Southwest.

Cultural resources from the Southwestern Cultural Traditions are much more elaborate and diverse than those from any other prehistoric time period. This is due to the variety of features and artifacts associated with complex societies. Because of this, these sites are likely to be damaged by vandals searching for painted pottery and other elaborate artifacts. Damage from natural processes, grazing, recreation and other uses is relatively minor in comparison.

Cultural properties of the Southwestern Cultural Traditions are significant for several reasons. Most importantly, they show that the area apparently served as a "crossroads". Here the Hohokam from the west and the Anasazi from the north interacted socially and economically with the Mogollon, whose greatest cultural display occurred to the east in New Mexico. This overlap of cultures provides a rich variety of data for investigating the effects of trading relationships between societies, the rise of agricultural societies, and the ability of archaeology to distinguish former culture groups.

Protohistoric Period. - This time period, occurring immediately before written history, occurred from about 1450 A.D. to 1700 A.D. The accounts of early Spanish explorers and missionaries in the late 17th century documented the existence of two distinct culture groups in southeastern Arizona, the Sobaipuri and the Apache.

The Sobaipuri were first encountered by the Spanish along the San Pedro River where these riverine adapted people were found practicing agriculture with some irrigation. They lived in distinctively shaped wattle-and-daub houses known as "jacals". The Sobaipuri abandoned the San Pedro Valley in the mid-18th century due to pressures created by the effects of diseases introduced by the Spanish, the social consequences of the Spanish mission system, and because of Apache raiding and warfare.

Apache peoples, specifically the Western and Chiricahua Apaches, practiced a hunting and gathering lifestyle. Later, the Western Apache began to practice some limited agriculture. Raiding and warfare were also important economic pursuits of the Apache. The Aravaipa Canyon area harbored an extensive Western Apache settlement. Historic ranching and other related activities are believed to have destroyed most of the evidence of this settlement.

Both Sobaipuri and Apache cultural properties are difficult to recognize. The Apache did make a crude, yet distinctive type of pottery. The only known Sobaipuri properties in the District are along the San Pedro River. Apache properties are relatively common within the District, at least theoretically. The number of sites is extremely hard to determine due to the difficulty in identifying them.

Protohistoric sites often contain European artifacts, making them difficult to distinguish from historic sites where Anglo-American remains overlay aboriginal remains. Their signficance is that they provide the bridge between unwritten and written history.

Spanish Period (1534-1820) - The earlier part (1534-1690) of the Spanish period was characterized by frontier exploration and military campaigns against the Hopi and Zuni in northeastern Arizona and northwestern New Mexico. Access to the Hopi and Zuni areas was generally through the San Pedro and Gila Valleys from what is now Mexico. The exact routes are not known due to the lack of accurate historical records. It is believed, however, that the route traversed the San Pedro River until it reached the present day community of Benson. From there it trended northeasterly, passing between the Galiuro and Winchester Mountains. The route then went into the Gila Valley by way of the upper Sulphur Springs and Aravaipa Valleys. After crossing the Gila River in the vicinity of Fort Thomas, it proceeded over the Gila Mountains and northward to the Hopi and Zuni areas. The route is commonly known as the Coronado Trail. There are currently no known cultural properties from this portion of the Spanish Period.

The second part of the Spanish period (1691-1820) reflects the missionization of native populations and of military campaigns against the Apache. Numerous architectural sites, settlements and visitas remain as evidence of the Spanish presence. The Presidio of Santa Cruz de Terrenate, located on the upper San Pedro River, is listed on the *National Register of Historic Places* (NRHP). Some also believe the site may be the location of the Sobaipuri village of Quiburi.

Mexican Period (1821-1848) - Southeastern Arizona became a possession of Mexico in 1821 as a result of the War of Mexican Independence. The area, however, never really developed a Mexican identity due to its remoteness and sparse population.

Associated with this period is the probable military encampment of Colonel Stephen Watts Kearny, located on the so-called Gila Trail. The encampment is listed on the NRHP. Apache raiding and warfare continued throughout this period and trappers, mountain men and bounty hunters spread into Arizona from the Anglo-American frontier. The sparse population involved with these short-term activities left little in the way of cultural properties and artifacts. The significance of the Mexican period is that it marks the beginning of the Anglo-American influence in southeastern Arizona.

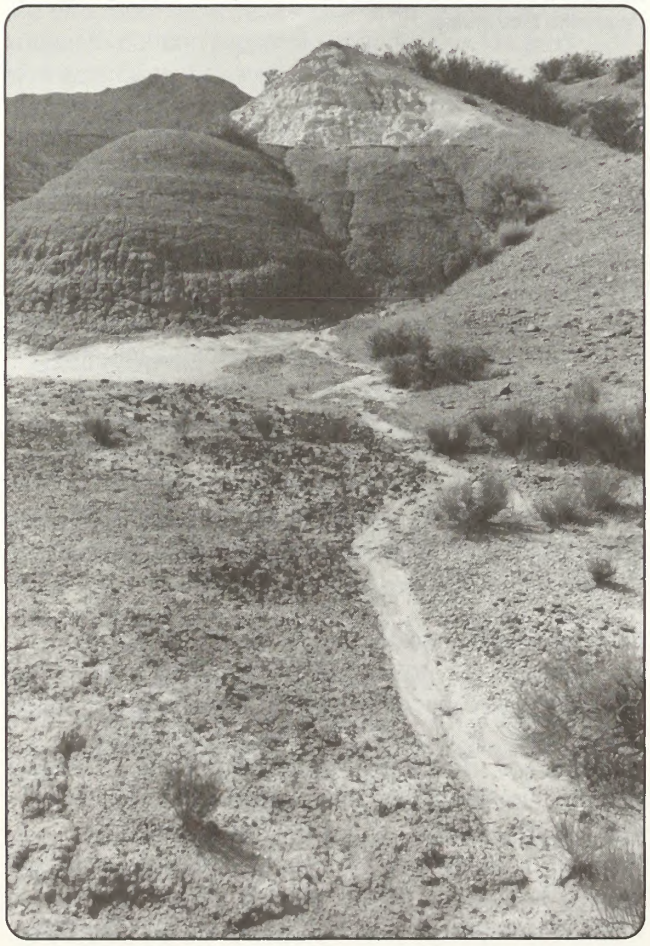
Ruins of a Butterfield Stagecoach station are located near the Peloncillo Mountains.

Anglo-American Territorial Period (1848-1912) - This period saw the development of travel routes, ranching, mining and towns. Settlers created trails, such as the NRHP eligible Safford-Morenci Trail, stage coach lines, such as the Butterfield Overland Stage Line, and military telegraph lines. Significant ranches, such as the Salazar, Muleshoe and Boquillas were established. Additional settlers came into the area to work at the newly created mines and ore-processing sites, such as Morenci, Millville and Contention. Historic farms with elaborate irrigation canals were built by pioneer Mormon farmers. Historic sites are considered significant for the information they contain about the development of the area by American pioneers.

Contemporary Period (1912-Present) - Farming, ranching and mining intensified during this period. The Civilian Conservation Corps (CCC) built soil and water control features during the 1930s to help check erosion caused by overgrazing and farming. CCC built cobble detention dams, rock features and camps that are in good condition and may possess National Register qualities. Isolated cabins and other habitation structures from this period can be dated by historic artifacts if they have not been removed by collectors. Sites associated with copper, lead and gold mining also have considerable local and historical significance.

Paleontological Resources

Paleontological resources (fossils) are the remains or traces of organisms that have been preserved by natural processes in the earth's crust. They are usually associated with sedimentary rocks and deposits rather than with igneous or metamorphic formations. Geologic formations were superimposed over one another during the course of time and represent the depositional history of the earth's crust. Fossils occurring within this depositional history evidence the biological history of the earth. The earliest invertebrate fossils (those without backbones) are from the Paleozoic Era dating between 250 to 600 million years before the present (my BP). Fossils from the Mesozoic Era (65 to 250 my BP) are conspicuous by the absence of reptiles such as the dinosaurs. The current mammalian age or Cenozoic Era began around 65 my BP. All of the District's vertebrate fossil sites are from the latter part of this era. Information on Safford District paleontological resources has been taken from a literature search (Lindsay 1979) of all existing records with references to District fossils.



White outcrops of diatomaceous earth on 111 Ranch are Pliocene and Pleistocene Age fossilized diatoms.

Periodically, fossils become exposed on the surface. These exposures may be quite localized or, more typically, the exposure will be in numerous localities of varying extent. They occur in association with geologic formations that typically meander throughout the landscape.

There are 64 invertebrate sites and 77 vertebrate sites in the District. The two paleontological areas of greatest significance are both Class I vertebrate sites. The Bear Springs Badlands Paleontological Area, covering approximately 16 square miles, contains fossilized remains of 12 different kinds of animals (Tomida 1987). Most of these were large elephant-like mammals, early horses including a three-toed horse, camel, peccary and cat. These mammals are grouped into the Blancan assemblage and lived from 1.9 my BP to 4.3 my BP. Also located in the Bear Springs Badlands are fossilized footprints of animals from this period. Erosion appears to present the greatest threat to the fossils. Vandalism of sites does not appear to be a problem to date.

The other major fossil area is known as the 111 Ranch Paleontological Area. Although large mammals such as those found at Bear Springs are present, 111 Ranch contains an extensive variety of intact, complete fossils of small mammals as well. The fossils represent one of the better assemblages of the Southwest. They are found in Pliocene deposits that are overlain by deposits of Early and Middle Pleistocene age. The Blancan verterbrate fauna provides a valuable climatological and chronological indicator. The fossils are contained in diatomaceous earth deposits that have been and are still threatened by mining activities.

An additional paleontological area of possible significance is known as the Hot Well Area. The area has not been extensively studied but does contain vertebrate fossils. The Hot Well Area is an area of rapidly increasing recreational use containing sand dunes and a geothermal spring.

Vegetation

The vegetation resource within the Safford District is diverse, abundant and important to other resources and to the general ecology of the District. The significance of this resource is reflected in the riparian ecosystems, watershed condition, wildlife habitat, livestock forage and water quality and quantity.

Riparian Communities - The riparian areas of the District are composed of seven different plant communities. These communities are described as follows:

Mixed Broadleaf Riparian - This type is a gallery forest with a double layered canopy. The upper layer is composed of Arizona sycamore, Fremont cottonwood, velvet ash, Arizona walnut, Goodding willow and Bonpland's willow in various combinations of pure stands of a single species to mixed stands of three, four or five species. The understory is comprised of young trees of the above species as well as shrubs and trees from higher elevation areas. Forbs and grasses may or may not be present, depending upon disturbances and amount of shade.

Cottonwood-Willow Riparian - This community is characterized by a gallery forest of Fremont cottonwood and Goodding willow along major drainages, usually below 3000 feet elevation. This community can be intermixed with mesquite and tamarisk as well as shrubs, grasses and forbs. The primary grass species associated with it are bermuda grass and giant sacaton.

Mesquite Bosque - Tree size mesquite, with a closed canopy 30 to 45 feet high, characterize this community. A shrub layer may or may not be present. The major grass present is giant sacaton. This community is located only along major drainages.

Tamarisk Bosque - Tamarisk in pure stands or mixed with other short trees is found in disturbed or eroded areas along lower elevation streams and rivers and may occur on the edges of stock ponds.

Riparian Scrub - This type is usually composed of a dense stand of mainly narrowleaf shrubs. Dominant species are usually seepwillow, desert willow or coyote willow. Other species that may be present include mesquite, catclaw and tamarisk.

Oak Riparian - A continuous line of tree-sized oaks characterize this type, usually found above 4000 feet in elevation. Emory oak, Arizona white oak, Mexican blue oak and chittamwood are usually the dominant tree species. Other chapparal shrubs or mixed broadleaf riparian tree species are intermixed with the above.

Marshlands and Cienegas - Associations of cattail, sedges and rushes dominate these areas. Salt grass may also be present at dryer edges.

Approximately 7,906 acres (328 miles) of riparian vegetation have been defined in the District meeting the definition used by BLM. Of this acreage, 452 acres (11 miles) are classified as in excellent condition, 3,335 acres (100 miles) in good condition, 3,058 acres (150 miles) in fair condition and 1,061 acres (67 miles) in poor condition. In addition, 191 acres (10 miles) along the San Simon River were considered to have lost all riparian vegetation. Due largely to increased emphasis on riparian management over the past 10 years, the trend of most riparian areas is improving and much of the remainder is static. Overall, nearly 48 percent of the riparian vegetation within the District is classified as in good or better condition.

Upland Communities - The District's upland or non-riparian vegetation was mapped into Upland Biotic Communities by Brown, Lowe and Pase (1979). The communities are described as follows:

Great Basin Conifer Woodland - This community consists mainly of various junipers and several varieties of pinyon. Two small areas of the District contains some Ponderosa pine. Gambel oak is also present at the higher elevations. Mixed shrubs, forbs and grasses are usually present. This community comprises less than 1 percent of the public lands (about 42,200 acres) in the Safford District.

Madrean Evergreen Woodland - This community, also relatively small (about 6,000 acres), is made up of evergreen oaks, various species of juniper and associated shrubs, forbs and grasses.

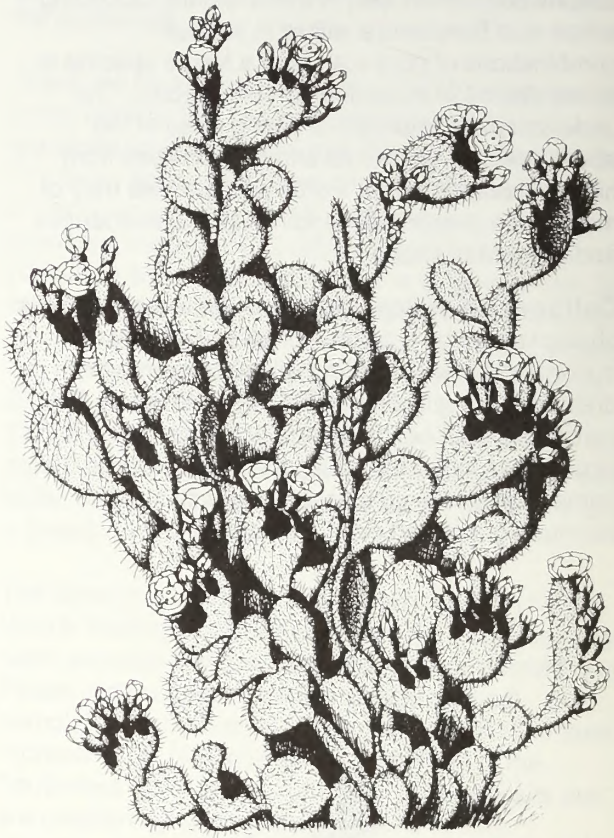
Interior Chaparral - Pointleaf manzanita is the most abundant species in this community. It is associated with scrub oak and silk tassel. It usually forms a community that has a complete canopy cover with virtually no understory vegetation. This community occurs solely on granitic soils and covers less than 1 percent of the District (about 9,000 acres).

Scrub Grassland - Tobosa grass, various grama grasses, shrubs and half shrubs characterize this community. The most abundant shrubs are mesquite and whitethorn. Dominant half-shrubs are burroweed and snakeweed. This community comprises about 442,800 acres in the District.

Chihuahuan Desert Scrub - This community is composed mainly of shrubs. Principal shrubs are mesquite, whitethorn, tarbush, creosote bush and mariola. Grasses are either non-existent or few in number. This association covers about 592,100 acres in the District.

Sonoran Desert Scrub - Dominant species are creosotebush, bursage, brittlebush, palo verde and cactus. This community is most prevalent on the lower portions of the western half of the District, covering about 300,000 acres. Grasses are relatively sparse.

The most recent range condition report lists about 60,000 acres in excellent condition, 460,000 acres in good, 560,000 acres fair, and 320,000 acres in poor condition. The apparent trend in rangeland condition is up on the vast majority of the District. The upward trend in condition is attributed to reductions in livestock numbers, better livestock management and increased rainfall in the last 10 years.

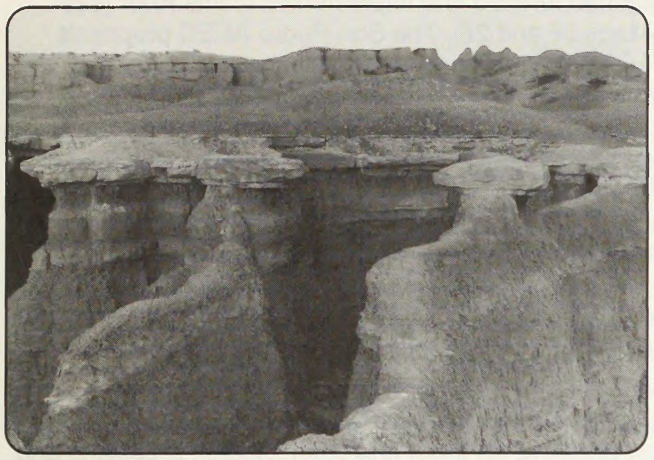


Threatened and Endangered Species - Several federally listed or candidate threatened and endangered species of plants are found on public lands in the Safford District. Table 3-3 lists the species and their status.

Table 3-3
Threatened and Endangered Plant Species

Common Name	Scientific Name	Safford Status	Federal Status
PLANTS			
beeplant	*Cleome multicaulis*	?	2
night blooming cereus	*Cereus greggii*	O	2
Cochise pincushion cactus	*Coryphantha robbinsorum*	?	T
Arizona hedgehog cactus	*Echinocereus triglochidiatus arizonicus*	O	E
Pringle's fleabane	*Erigeron pringlei*	O	2
Lemmon's fleabane	*Erigeron lemmonii*	?	2
Bartram's echeveria	*Graptopetalum bartramii*	?	2
needle spine pineapple cactus	*Neolloydia erectrocentra erectrocentra*	O	2
rosewood	*Vauquelinia pauciflora*	O	2

O = Known occurrence ? = Probable E = Endangered T = Threatened 2 = Federal candidate for listing
Source: Safford District Files



Erosion of the soft rocks at Red Knolls has resulted in a display of many unusual features.

Outdoor Recreation

The public lands provide the setting for a wide variety of recreation opportunities in the District. Though most opportunities are for dispersed activities, developed recreation sites are also present. Activities vary from off-highway vehicle driving to backcountry hiking in Aravaipa Canyon Wilderness or rafting in the Gila Box.

Some of the more common activities that take place in the District include hunting, fishing, hiking, backpacking, horseback riding, rockhounding, picnicking, camping, floatboating, sightseeing, birdwatching and nature study, photography and off-highway vehicle driving. Many of these activities occur without the need for developed facilities.

Some facilities have been developed, however, for the benefit of the public. Fourmile Canyon Campground, near Klondyke, is used primarily by hunters and visitors to Aravaipa Canyon Wilderness. Three picnic sites have been built - two on the Gila River between Safford and Clifton, and a third at the foot of the Dos Cabezas Mountains near Bowie. Limited facilities are provided elsewhere. Signs, trash barrels, visitor register boxes and parking areas are provided at two rockhound areas, Safford-Morenci and Aravaipa Canyon Wilderness trailheads, and three access points to the San Pedro Riparian National Conservation Area (NCA).

Areas of concentrated recreation use include hiking and backpacking in Aravaipa Canyon Wilderness, picnicking on the Gila River at the Old Safford-Clifton Road Bridge and Spring Canyon, picnicking on the Gila River near Winkelman, camping and picnicking at Bonita Creek, off-highway vehicle driving in the Gila Box (summer) and the Hot Well Dunes in the San Simon Valley southeast of Safford, floatboating the Gila and San Francisco Rivers through the Gila Box (spring), and big and small game hunting Districtwide. Birdwatching and nature study occur mostly in riparian areas, particularly at Bonita Creek, Eagle Creek, Muleshoe Ranch, Guadalupe Canyon, Aravaipa Canyon and the San Pedro River.

The quality of the recreation experience found in the District varies with the activity and the expectations people have of their experience. High quality experiences are generally available for most of the activities, though at times crowding and lack of facilities or information can diminish the experience. To maintain the wilderness setting and the quality of the backcountry experience, use of Aravaipa Canyon Wilderness is limited to 50 people per day. Special recreation use permits are issued to control the numbers of visitors to protect the fragile resource and the wilderness experience.

Data on recreation use statistics is kept for Aravaipa Canyon Wilderness, Fourmile Canyon Campground, the two rockhound areas, the picnic site at the Old Safford-Clifton Road bridge and the three entry points to the San Pedro Riparian NCA. Use levels are generally stable Districtwide. Off-highway vehicle use at Hot Well Dunes and floatboating in the Gila Box appear to be gaining in popularity. It is anticipated that visitor use will continue to increase on the San Pedro Riparian NCA as facilities are developed and the public lands are further opened to recreation use.

Visual Resources

The landscape features of the District are varied and thus so is the visual, or scenic quality. While a person's perception of scenery is an individual determination, there are certain landscape features that can be assessed. The form, line, color and texture (basic landscape elements) of the topography, soil, vegetation and human developments all affect the scene. Generally, a landscape with a harmonious variety of the basic elements will be more interesting and appealing.

Since the Basin and Range Physiographic Province is an area of broad, gently sloping valleys with rugged mountains rising abruptly above them, this Province includes a variety of landscape types with many scenic areas. The rugged topography of the Black Hills and the Gila, Mescal, Whitlock, Peloncillo, Mule and Dos Cabezas Mountains provide varied landscapes and scenic views. The canyons of the Gila and San Francisco Rivers and Aravaipa, Redfield and Swamp Springs Creeks also provide interesting and

scenic views. The combination of landform and vegetation create outstanding scenery in other parts of the District, including the San Pedro River, Black Rock and Guadalupe Canyon. Soil erosion in the Bear Springs Flat area has resulted in some interesting and scenic topographic features. Areas with less topographic and vegetative variability, and thus less scenic quality, include the creosote flats at the base of the Gila Mountains and the desert shrubs and grasslands along the San Simon River Valley.

Agricultural modification is evident along the Gila River from Safford to Fort Thomas, Interstate 10 near Bowie and San Simon, the Gila River near Duncan and the Aravaipa and San Pedro Valleys. Significant changes to the landscape have resulted from mineral development in the mountains north of Clifton and Morenci, in the Dripping Springs Mountains at Christmas, in the San Pedro Valley near San Manuel and in the San Simon Valley north of Interstate 10.

Visual resource management (VRM) is a process used by BLM to identify and manage the scenic quality and to reduce the impact of development activities on the scenery. To manage the visual resources, management classes have been developed that describe the degree of landscape modification permissible (see Appendix 8 for management class definitions). Wilderness study areas are managed as Class II areas during the wilderness review process, unless previously designated Class I in prior planning. Table 3-4 identifies current acreage by VRM class in the District.

Table 3-4
VRM Classes by Acreage

VRM Class	Acreage
I	131,716
II	17,287
III	489,063
IV	646,774
Unclassified	115,160
Total	1,400,000

Source: Safford District Files

ACECs and Other Types of Special Management

There are no Areas of Critical Environmental Concern (ACEC) in the District. Through the *San Pedro River Riparian Management Plan* (BLM 1989), however, three Research Natural Area ACECs were recommended and those recommendations will be carried forward and implemented in this RMP (see Maps 25 and 26). The San Pedro ACEC proposals are:

St. David Cienega RNA ACEC - designate 350 acres to preserve a remnant cienega for scientific research.

San Pedro River RNA ACEC - designate 1,340 acres to preserve a cottonwood/willow riparian area, mesquite bosques and Chihuahuan Desert scrub vegetation for scientific research.

San Rafael RNA ACEC - designate 370 acres to preserve an alkali and giant sacaton grassland and a cottonwood-willow riparian area for scientific research.

The Willcox Playa (2,475 acres, 8 miles southwest of Willcox) is a National Natural Landmark and has been managed to preserve the Pleistocene lakebed since its designation.

During the planning process, 34 areas were nominated as ACECs for consideration in this RMP. Dual nominations were received on several areas. Table 3-5 identifies the nominated areas, a brief description of their values, and the determination of whether the areas qualify for consideration as ACECs. ACEC proposals are identified in Chapter 2, with a more detailed analysis of each area in Appendix 2. Map 32 shows the location of the ACECs being studied in this RMP.

The coati spends hot summer afternoons napping in the shade of wooded canyons.

Table 3-5
ACEC Nominations

	Nominated Area	Values/Hazards Requiring Special Management	Qualified for ACEC Study?
1.	Aravaipa Canyon	riparian, native fish, T&E wildlife, water quality	yes
2.	Bass, Hot Springs, & Redfield Canyons	riparian, native fish, T&E wildlife, water quality	yes
3.	Bonita Creek	city water supply, native fish, riparian, cultural resources	yes
4.	Black Rock	unique vegetation, T&E wildlife	yes
5.	Dry Spring	relict riparian area	yes
6.	Eagle Creek	scenery, riparian, sensitive wildlife	yes
7.	Fishhook Canyons	riparian	no
8.	Gila Box	scenery, riparian, T&E wildlife, native fish, geologic formations, recreation, cultural resources	yes
9.	Gila River Canyon	riparian, T&E wildlife, scenery, geologic formations	no
10.	Gila River Mesquite Bosque	remnant vegetation type	yes
11.	Johnny Creek	scenery	no
12.	Markham Creek	riparian, T&E wildlife	no
13.	Mescal Creek	riparian, native fish	no
14.	Mescal Mountains	relict desert grasslands, T&E plant	yes
15.	Muleshoe Co-op Mgmt. Area	riparian, T&E wildlife, native fish, water quality	yes
16.	Pilares and Sombrero Butte	relict desert grasslands	yes
17.	Salt Creek	riparian, wildlife, cultural resources	no
18.	Swamp Spring Canyon	riparian, sensitive wildlife, native fish	yes
19.	Sycamore Canyon	riparian, scenery	no
20.	Trujillo Canyon	riparian, scenery	no
21.	Turtle Mountain	relict desert grassland	no
22.	Bear Springs Badlands	paleontological resources, scenery	yes
23.	Red Knolls	natural hazard	no
24.	Baker/Guadalupe Canyons	riparian, T&E wildlife, vegetation, scenery	yes
25.	Bowie Mtn./Apache Pass	scenery, T&E wildlife, cultural resources	yes
26.	Dos Cabezas Peaks	historic landmark, vegetation, scenery	yes
27.	Government Peak	geologic formations, scenery, cultural resources	no
28.	Happy Camp, Howell and Tar Box Canyons	scenery, historic sites, riparian	no

Table 3-5 (cont.)
ACEC Nominations

	Nominated Area	Values/Hazards Requiring Special Management	Qualified for ACEC Study?
29.	Peloncillo Mountains	geologic formations, cultural resources, wildlife, scenery	yes
30.	San Francisco River	riparian, wildlife, native fish, cultural resources	no
31.	San Simon Cienega	riparian wetland	no
32.	Willcox Playa	natural landmark, T&E plants and wildlife, geologic formation, cultural resources	yes
33.	Coronado Mountain	unique vegetation	yes
34.	111 Ranch	paleontological resources	yes

Source: Safford District Files

Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers in Safford District. In 1982 the National Park Service identified the Gila River as deserving study to determine its suitability for inclusion in the National Wild and Scenic River System. Two segments of the Gila River are being studied as part of this RMP to determine their suitability: 26 miles of the Gila River through the Gila Box between Safford and Clifton (including 5 miles of the San Francisco River upstream from its confluence with the Gila) and 32 miles of the Gila River from Coolidge Dam to Winkelman (see Maps 29 and 30).

Wilderness

There is one designated wilderness area in the District - Aravaipa Canyon. Aravaipa Canyon, designated in 1984, includes 6,699 acres. Since 1980, BLM has been studying 14 areas to determine their suitability for inclusion into the National Wilderness Preservation System. Table 3-6 identifies the areas being studied (wilderness study areas - WSA), their acreages and the acreage BLM has recommended suitable for wilderness designation. Only Congress can designate a wilderness area. Map 33 shows the location of Aravaipa Canyon Wilderness and the WSAs. These WSAs are being managed to preserve their wilderness values until Congress determines whether they should be designated wilderness or released for other uses.

Table 3-6
Wilderness Study Areas

	Wilderness Study Area	Total acreage	Recommended acreage
1.	Needle's Eye	9,436	9,201
2.	Black Rock	8,492	6,590
3.	Fishhooks	15,215	10,883
4.	Day Mine	17,309	0
5.	Gila Box	17,831	0
6.	Turtle Mountain	17,422	0
7.	Javelina Peak	18,853	0
8.	Peloncillo Mountains*	12,317	0
9.	Dos Cabezas Mountains	18,509	11,998
10.	Bowie Mountain	6,156	0
11.	Baker Canyon	4,812	0
12.	Apache Box**	932	0
13.	Hoverrocker*	2,791	0
14.	Galiuro Additions	640	640

* Parts of these WSAs in New Mexico ** Entire WSA in New Mexico
Source: Safford District Files

Through exchanges with the State of Arizona, large tracts of State land have come into public ownership. These lands have not been evaluated for their wilderness values. This RMP will evaluate, under Section 202 of FLPMA, the suitability of recently acquired lands adjacent to Aravaipa Canyon Wilderness (17,240 acres) and adjacent to the southern end of the Galiuro Wilderness (14,980 acres) for their suitability for inclusion in the National Wilderness Preservation System. Map 33 shows the location of these areas.

Fire Management

The fire management program in Safford District is separated into two different components; the wildfire suppression component and the prescribed fire component.

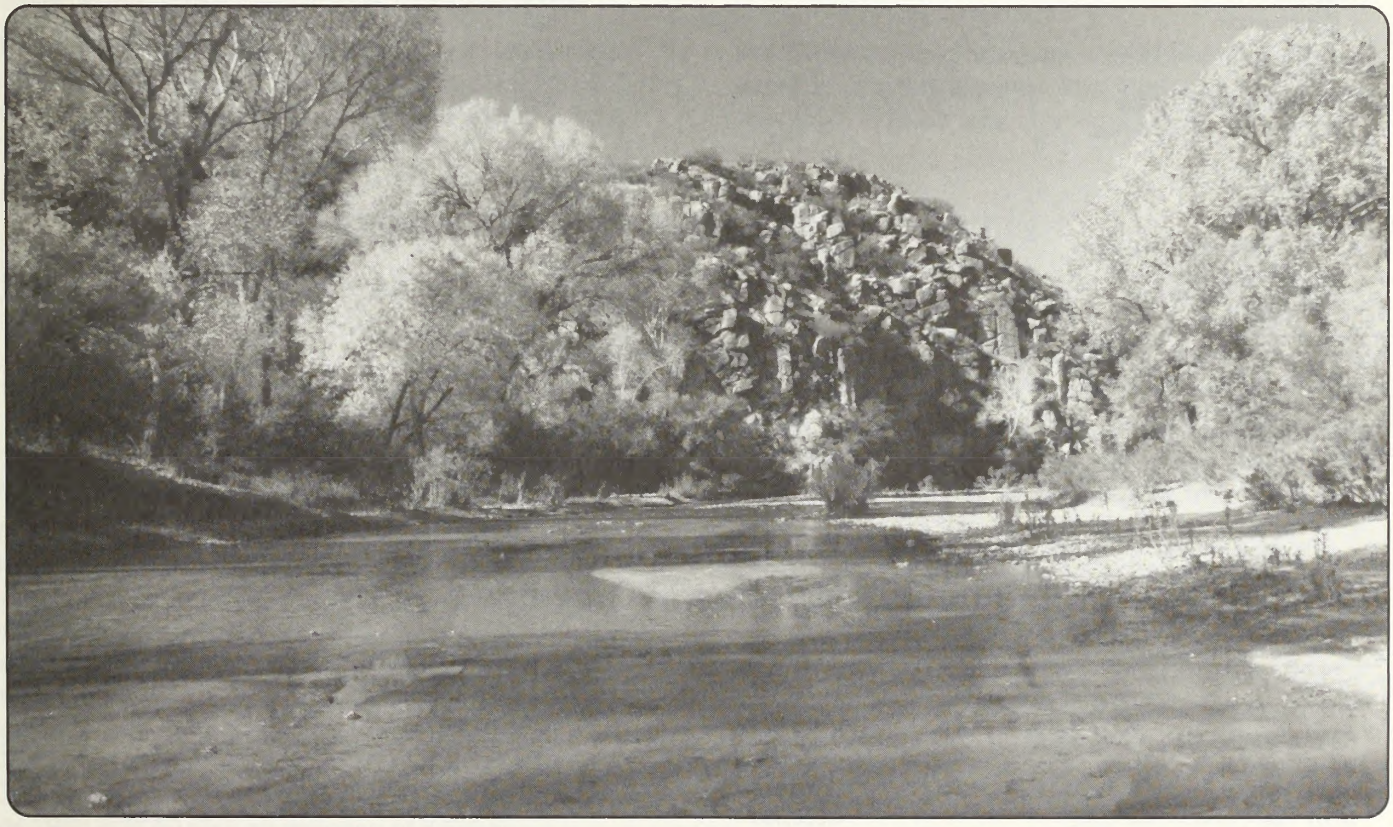
Wildfire - During the past eight years, the District has averaged over 18 fires each year, burning slightly over 1,826 acres per year. These figures represent an increase from 10 fires each year and 1,310 acres per year for the previous 10 years. Increased frequency can be attributed to improved record keeping, an increase in winter and spring rainfall, and to increased forage conditions due to intensive range management efforts brought about by the grazing EIS.

Present fire policy dictates that suppression action be taken on all fire starts, with the most intensive action taken when life, property or critical resources are threatened. Such areas have been delineated and planned for in the District Fire Management Plan.

One of the more critical vegetation types in the District is the Mixed Broadleaf Riparian. The components of this type are very susceptible to fire damage. Ordinarily, there are not enough contiguous fuels to successfully carry a fire very far and most fires in this type are small.

The more significant fires with respect to size occur in the scrub grasslands in the higher elevations, in the Sonoran Desert Scrub, in the higher elevations and in the Chihuahuan Desert Scrub. The amount of annual rainfall plays a very significant role in fire size and intensity, since rainfall affects the presence of fine fuels (grasses) needed to carry the fire from one area to the next.

Prescribed Fire - Fire has been used to a limited extent in the past for vegetation manipulation to reduce heavy brush concentrations, to open areas for increases in grass species, better forage quality and to provide easier movement of both livestock and wildlife. Such fires are restricted to those times and places where control of the fire can be maintained.



The San Pedro Riparian National Conservation Area, dedicated in 1989, is one of the best remaining desert riparian ares in the Southwest.

Certain conditions (prescriptions) must be met before ignition and maintained during the burning. Because of the difficulty of meeting prescription conditions, this technique of vegetation manipulation has not been extensively used. Where it has been used, however, the results have been favorable. Increased use of prescribed fire as a resource management tool is currently being planned.

Social and Economic Conditions

The RMP area includes public lands in Greenlee, Graham, Gila, Pinal and Cochise counties. This section discusses the socio-economic conditions of each of these counties. The source of the information is the *Arizona Statistical Review* (Valley National Bank 1988).

Greenlee County - Greenlee County, named for Mason Greenlee, an early southeastern Arizona pioneer, was created in 1909. Its topography consists of mountain ranges, river valleys and deserts. The County has a land area of 1,838 square miles. Land ownership is 79 percent federal, 12 percent State and 9 percent private. The major communities are Clifton, the county seat, (4,215 people, 1988 estimate) and Duncan (690). The unincorporated mining town of Morenci is also located in the County. County population in 1980 was 11,406. The estimated population for 1988 was 9,500, a 17 per cent decrease. Population projections for the year 2000 are 9,100, a continued decrease. Population density in 1988 was 5.2 people per square mile.

The principal industries of Greenlee County are copper mining and smelting, ranching and tourism. The following table shows employment figures.

Table 3-7
Employment in Greenlee County

	Monthly Avg.-1987	June, 1988
Total Employed	2,950	2,675
Unemployed		
Number	275	275
Rate (seasonally adjusted)	8.5 %	9.7 %
Non-farm Wage and Salary	3,175 *	2,875 *
Manufacturing	25	75
Mining	1,575	1,600
Construction	625	225
Transportation & Public Utilities	50	50
Wholesale/Retail Trade	225	225
Finance, Insurance & Real Estate	25	25
Services	125	125
Government	525	550
Farm and Agricultural Related Wage & Salary and Self Employed	No figures available.	

*Many non-farm Wage and Salary employees work in Greenlee County but reside elsewhere.
Source: *Arizona Statistical Review*, Valley National Bank, 1988.

Personal income totalled $77,400,000 in 1986, down from previous years. Per capita income was $9,003, 32 percent lower than the State average of $13,300. Per capita income, however, was comparable or higher than previous years in Greenlee County. The following table shows economic indicators for Greenlee County.

Table 3-8
Economic Indicators in Greenlee County

Indicator	1977	1987	% Change
Population	11,900	9,600	- 19.3%
Wage & Salary Employment	3,825	3,175	- 17.0%
Retail Sales	$30,179,000	$37,736,000	+25.0%
Bank Deposits	$29,761,000	$45,117,000	+ 51.6%
Vehicle Registrations	10,016	7,731	- 22.8%
Motor Fuel Consumption (gals)	4,930,000	3,670,584	- 25.5%

Source: *Arizona Statistical Review*, Valley National Bank, 1988

Graham County - Graham County was probably named after Lieutenant Colonel Graham, a member of an 1850s survey party. The Gila River crosses the county from east to west and many farms flourish along its banks. The County has a land area of 4,630 square miles, with 22 square miles of water. Land ownership is 38 percent federal, 18 percent State, 37 percent Indian reservation and 7 percent private. The leading towns are Safford, the county seat, (7,755 people, 1988 estimate), Thatcher (3,485) and Pima (1,935). County population in 1980 was 22,862. The estimate for 1988 was 24,800, an increase of 8.5 percent. Population projections for the year 2000 are 26,300, an increase of 15 percent from 1980. Population density in 1988 was 5.4 people per square mile.

The principal industries of Graham County are farming and ranching, tourism and recreation. The following table shows employment figures.

Table 3-9
Employment in Graham County

	Monthly Avg.-1987	1988
Total Employed	6,975	7,300
Unemployed		
Number	775	750
Rate (seasonally adjusted)	10.0 %	9.1 %
Non-Farm Wage and Salary	4,825	5,000
Manufacturing	200	200
Construction	175	200
Transportation & Public Utilities	150	150
Wholesale/Retail Trade	1,275	1,625
Finance, Insurance & Real Estate	125	125
Services	800	875
Government	2,100	1,825
Farm & Agricultural Related Wage & Salary and Self Employeed	2,150	2,300

Source: *Arizona Statistical Review*, Valley National Bank, 1988

Personal income totalled $185,100,000 in 1986, higher than previous years. Per capita income was $7,810, 41 percent lower than the State average of 13,300. Per capita income, however, was higher than previous years in Graham County. The following table shows economic indicators for Graham County.

Table 3-10
Economic Indicators in Graham County

Indicator	1977	1987	% Change
Population	21,000	24,700	+ 17.6%
Wage & Salary Employment	4,175	4,825	+ 15.6%
Retail Sales	$71,241,000	$78,427,000	+ 10.1%
Bank Deposits	$59,342,000	$98,779,000	+ 66.5%
Vehicle Registrations	14,727	18,083	+ 22.8%
Motor Fuel Consumption (gals)	13,230,000	9,174,342	- 30.7%

Source: *Arizona Statistical Review*, Valley National Bank, 1988

Gila County - Gila County was named for the Gila River and is dominated by desert and mountainous terrain. The County has a land area of 4,752 square miles, with 41 square miles of water. Land ownership is 59 percent federal, 1 percent State, 37 percent Indian reservation and 3 percent private. The leading towns are Payson (7,745 people, 1988 estimate), Globe, the county seat (6,435) and Miami (2,545). County population in 1980 was 37,080. The estimate for 1988 was 40,500, an increase of 8.5 percent. Population projections for the year 2000 are 45,800, an increase of 19 percent from 1980. Population density in 1988 was 8.5 people per square mile.

The principal industries of Gila County are copper mining and smelting, ranching, lumbering, tourism and recreation. The following table shows employment figures.

Table 3-11
Employment in Gila County

	Monthly Avg.-1987	June, 1988
Total Employed	10,800	10,900
Unemployed		
Number	1,500	1,350
Rate (seasonally adjusted)	12.2 %	10.9 %
Non-farm Wage and Salary	10,250	10,525
Manufacturing	1,300	1,325
Mining	1,275	1,375
Construction	675	600
Transportation & Public Utilities	425	400
Wholesale/Retail Trade	2,150	2,425
Finance, Insurance & Real Estate	275	275
Services	1,700	1,750
Government	2,450	2,375
Farm and Agricultural Related Wage & Salary and Self Employed	550	375

Source: *Arizona Statistical Review*, Valley National Bank, 1988.

Personal income totalled $357,200,000 in 1986, up steadily from previous years. Per capita income was $8,997, 32 percent lower than the State average of $13,300. Per capita income, however has increased from previous years. The following table shows economic indicators for Gila County.

Table 3-12
Economic Indicators in Gila County

Indicator	1977	1987	% Change
Population	34,300	40,100	+ 16.9%
Wage & Salary Employment	10,075	10,250	+ 1.7%
Retail Sales	$104,160,000	$142,522	+ 36.8%
Bank Deposits	$93,827,000	$230,193,000	+ 145.3%
Vehicle Registrations	31,399	46,471	+ 48.0%
Motor Fuel Consumption (gals)	20,443,000	20,059,033	- 1.9%

Source: *Arizona Statistical Review*, Valley National Bank, 1988

Pinal County - Pinal County probably received its name from the Western Apache word meaning deer. The County is divided into two distinct regions in geography and economy. The eastern part is characterized by mountains and copper mining. The western region is mainly low desert valleys and irrigated agriculture. The County has a land area of 5,344 square miles, with 30 square miles of water. Land ownership is 16 percent federal, 35 percent State, 23 percent Indian reservation and 26 percent private. The leading towns are Casa Grande (17,660 people, 1988 estimate), Apache Junction (15,950), Coolidge (7,720), Eloy (7,345), Florence, the county seat (6,890) and Superior (4,860). County population in 1980 was 90,918. The estimate for 1988 was 110,300, an increase of 17.5 percent. Population projections for the year 2000 are 149,100, an increase of 39 percent from 1980. Population density in 1988 was 20.6 people per square mile.

The principal industries of Pinal County are farming and ranching, copper mining, tourism and manufacturing. The following table shows employment figures.

Table 3-13
Employment in Pinal County

	Monthly Avg.-1987	June, 1988
Total Employed	33,425	33,675
Unemployed		
Number	4,175	3,275
Rate (seasonally adjusted)	11.1 %	8.3 %
Non-farm Wage and Salary	28,900	20,100
Manufacturing	3,525	3,750
Mining	3,775	3,900
Construction	1,500	1,300
Transportation & Public Utilities	1,100	1,225
Wholesale/Retail Trade	5,125	5,250
Finance, Insurance & Real Estate	800	800
Services	4,175	4,200
Government	8,900	8,675
Farm and Agricultural Related Wage & Salary and Self Employed	4,525	4,575

Source: *Arizona Statistical Review*, Valley National Bank, 1988.

Personal income totalled $939,000,000 in 1986, up steadily from previous years. Per capita income was $9,170, 31 percent lower than the State average of $13,300. Per capita income, however, has increased from previous years. The following table shows economic indicators for Pinal County.

Table 3-14
Economic Indicators in Pinal County

Indicator	1977	1987	% Change
Population	87,100	107,200	+ 23.1%
Wage & Salary Employment	23,625	28,900	+ 22.3%
Retail Sales	$276,745,000	$362,742,000	+ 31.1%
Bank Deposits	$163,348,000	$477,941,000	+ 192.6%
Vehicle Registrations	64,037	100,822	+ 57.4%
Motor Fuel Consumption (gals)	43,824,000	65,373,638	+ 49.2%

Source: *Arizona Statistical Review*, Valley National Bank, 1988

Cochise County - Cochise County was named after the famed Chiricahua Apache leader. The County has a land area of 6,219 square miles. Land ownership is 24 percent federal, 34 percent State and 42 percent private. The leading towns are Sierra Vista (34,290 people, 1988 estimate), Douglas (14,105), Bisbee, the county seat (8,065), Willcox (4,045) and Benson (3,975). County population in 1980 was 85,686. The estimate for 1988 was 102,400, an increase of 16 percent. Population projections for the year 2000 are 129,000, an increase of 33.5 percent from 1980. Population density in 1988 was 16.5 people per square mile.

The principal industries of Cochise County are farming and ranching, tourism and military. The following table shows employment figures.

Table 3-15
Employment in Cochise County

	Monthly Avg.-1987	June, 1988
Total Employed	31,850	31,525
Unemployed		
Number	3,050	2,900
Rate (seasonally adjusted)	8.7 %	8.3 %
Non-farm Wage and Salary	24,700	24,600
Manufacturing	1,300	1,150
Mining	100	100
Construction	1,125	1,200
Transportation & Public Utilities	1,550	1,600
Wholesale/Retail Trade	5,425	5,375
Finance, Insurance & Real Estate	675	650
Services	4,350	4,525
Government	10,075	10,000
Farm and Agricultural Related Wage & Salary and Self Employed	7,150	6,925

Source: *Arizona Statistical Review*, Valley National Bank, 1988.

Personal income totaled ($960,300,000 in 1986, up steadily from previous years. Per captia income was $9,952, 25 percent lower than the State average of $13,300. Per capita income, however, has increased from previous years. The following table shows economic indicators for Cochise County.

Table 3-16
Economic Indicators in Cochise County

Indicator	1977	1987	% Change
Population	80,700	100,300	+ 24.3%
Wage & Salary Employment	18,900	24,700	+ 30.7%
Retail Sales	$232,229,000	$329,854,000	+ 42.0%
Bank Deposits	$195,431,000	$412,864,000	+ 111.3%
Vehicle Registrations	60,226	81,251	+ 34.9%
Motor Fuel Consumption (gals)	50,297,000	40,721,989	- 19.0%

Source: *Arizona Statistical Review*, Valley National Bank, 1988

Payments in Lieu of Taxes (PILT) - As required by law, the federal government makes a payment to each county that has federal lands (public land, national forest, national parks, etc.) in its boundaries. This payment is called a Payment in Lieu of Taxes (PILT) and is made to compensate county governments for tax revenues that would be collected if federal lands were in private ownership. Table 3-17 identifies the PILT payments that were made to the counties in the Safford District in 1988.

Table 3-17
PILT Payments by County in 1988

County	PILT Payment	Population	Federal Entitlement Acres
Cochise	$589,457	102,400	955,238
* Gila	$731,688	40,500	1,794,355
Graham	$574,458	24,800	1,126,016
Greenlee	$ 89,722	9,500	929,292
* Pinal	$369,728	110,300	940,851

* Only parts of these counties are in the Safford District
Source: Saffford District Files

Public Attitudes and Perceptions - With the growth of the Bureau into intensive management of the multiple uses, BLM constituents have also grown. Public involvement in management of the public lands has expanded as more and more people use these lands. There is an interest or advocacy group associated with nearly every program BLM manages. As such, public attitudes about how BLM manages the public lands cover the entire spectrum from support to opposition. Because there are so many uses of the public lands, there are many opportunities for user conflicts. As such, a decision that one user may find agreeable, may adversely impact or preclude the desired activity by another user.

ENVIRONMENTAL CONSEQUENCES 4

Introduction

Chapter 4 analyzes the environmental consequences of implementing specific actions proposed in each alternative, including the *Preferred Alternative*. The level of analysis for each element of the environment depends on the degree of impact expected. Each specialist evaluated the environmental consequences of the actions in every alternative to determine the degree of impact (low, medium or high) that was anticipated. These determinations form the basis of this chapter. The interdisciplinary team concluded that no significant impacts would occur to topography, air or climate. They will not be addressed further in this document.

Assumptions

The impact analysis was based on the following assumptions:

1. Funding and personnel would be available to fully implement any alternative.

2. The definition of long-term is five years or more. All impacts are long-term unless otherwise noted.

3. Native American religious practices shall receive due consideration under the provisions of the *American Indian Religious Freedom Act*.

4. Environmental analyses will be prepared to determine the significance of environmental impacts from the implementation of activity plans or site-specific actions.

5. Inventories for cultural resources and Native American values will occur on areas of proposed land uses. Protection of significant values will occur through avoidance and mitigative actions. Compliance with Section 106 of the *National Historic Preservation Act of 1966* and its implementing regulations in 36 CFR 800 will be completed before starting specific projects resulting from decisions in this plan.

6. All impacts are direct unless otherwise noted.

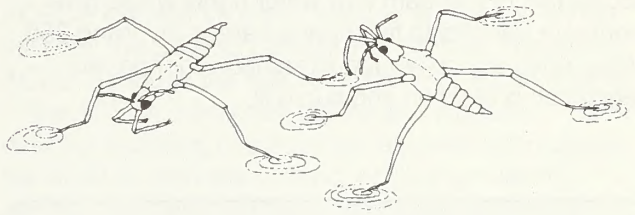
7. Only those effects that are significant are listed. Positive effects are called benefits and adverse effects are called impacts.

8. Recommendations for wilderness and wild and scenic rivers will be designated by Congress during the life of the plan. Areas not recommended for designation will be released for other uses.

Effects of the Alternatives on the Environment

Alternative A (The Preferred Alternative)

Water - Management prescriptions for five ACECs totalling 42,278 acres, additions to Aravaipa Canyon Wilderness and designation of the Gila Wild and Scenic River would provide low benefits to both water quality and quantity. Preservation of these areas would provide protection of water quality by reducing erosion and sedimentation, while promoting vegetative growth.



Withdrawal from mineral entry (29,104 acres), prohibition of surface occupancy for mineral leasing activities (33,323 acres) and prohibition of mineral material sales (33,512 acres) would give low benefits to water quality. This is because surface disturbances associated with these activities would not occur, thereby reducing sedimentation in local waters.

Restricting OHVs to existing roads and trails or prohibiting use in certain areas (1,398,292 acres) would provide low benefits to water quality by reducing soil erosion and sedimentation in streams and rivers in the District.

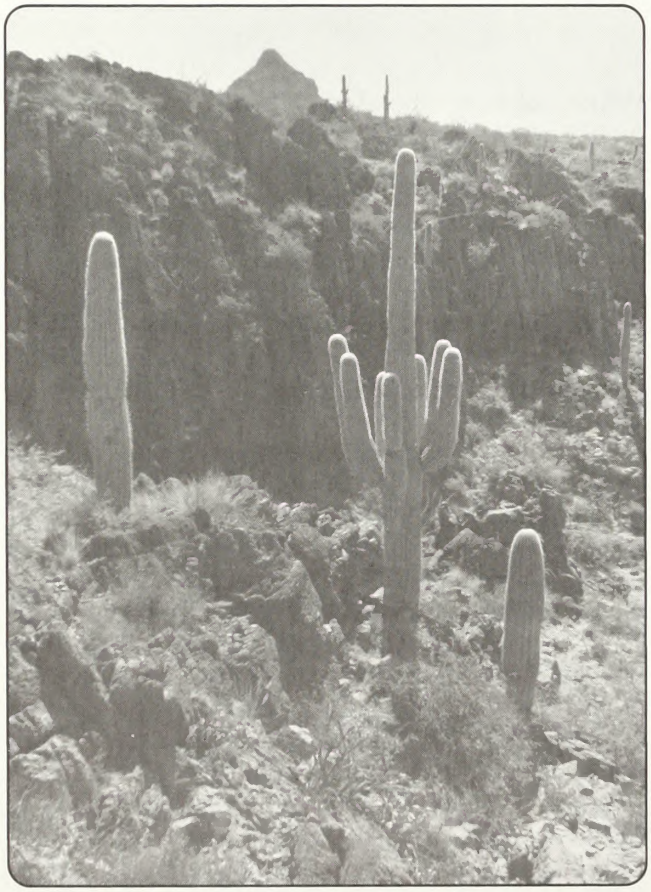
Soil - The construction of Timber Draw detention dam and the repair of Oso Largo detention dam would prevent approximately 500 acre feet of soil from leaving the watershed each year. The Timber Draw dam would accelerate the filling of the eroded San Simon River channel and the repair of Oso Largo detention dam would rehabilitate eroded areas in Bear Springs Wash. These actions would have a moderate benefit.

Limiting OHVs to existing roads and trails in most of the District would reduce soil erosion, a low benefit. The designation of the Hot Well Dunes (1,708 acres) as "open" for off-highway vehicle use would cause accelerated erosion on those acres, a low impact.

Riparian Vegetation - Management prescriptions for the ACECs containing riparian vegetation (Bonita Creek, Gila Box ONA, Turkey Creek Riparian, Dry Spring RNA, Swamp Springs-Hot Springs Watershed and Guadalupe Canyon ONA) would highly benefit riparian areas. Over 1,500 acres and 40 miles of riparian vegetation would improve one condition class.

Actions limiting vehicle use to existing roads and trails would provide low benefits to riparian vegetation by limiting disturbance from vehicles.

Disposal actions would have a low impact to riparian systems as less than 25 acres would be removed from BLM management. Acquisitions would add to the riparian system, offsetting the 25-acre loss. These planned acquisitions would give moderate benefits by providing additional management and protection. Acquisition of instream flow water rights would give moderate benefits to five riparian areas involving 350 acres, ensuring continued streamflow for riparian vegetation protection and survival.



Canyons in the foothills of the Gila Mountains mark the easternmost range of the saguaro.

Use of "No Surface Occupancy" stipulations for mineral leasing activities in riparian areas (4,458 acres) would provide low benefits to riparian vegetation because activities that would disturb the vegetation would not be permitted. Mineral leasing activities would have to occur out of the riparian zone.

Upland Vegetation - Land treatments would have a low benefit to vegetation. Generally, only small areas (less than 2,000 acres each) are thought to be suitable for land treatment. The lack of adapted plant species, discontinuous fuels, topographic limitations and economic considerations all make large-scale land treatments impractical.

Restricting OHVs to existing roads and trails or prohibiting use in certain areas (1,398,292 acres) would provide low benefits by protecting vegetation from vehicular disturbance.

Wildlife Habitat - ACEC designation of 10 areas totalling 63,307 acres would give protection and moderate benefits to 18 wildlife species by increasing and improving habitat. Management of Black Rock RNA, Bonita Creek, Gila Box ONA, Turkey Creek Riparian, Dry Spring RNA, Swamp Springs-Hot Springs Watershed, Dos Cabezas Peaks, Guadalupe Canyon ONA, Eagle Creek Bat Cave and Peloncillo Mountains ONA ACECs would give high benefits to wildlife habitat by preserving unique habitat (bat cave, etc.) or riparian ecosystems. Designation of Table Mountain RNA, Desert Grasslands RNA, Bowie Mountain Scenic and Coronado Mountain RNA ACECs would provide low benefits to wildlife habitat by protecting necessary habitat from disturbances.

Designation of bighorn sheep lambing areas as limited or closed to off-highway vehicle use would provide high benefits to the sheep by reducing disturbances, thereby increasing lamb survival. OHV limitations and closures would highly benefit 17 priority wildlife species and their habitat.

Management actions planned for priority wildlife species (spring protection, prescribed burning, etc.) and habitats would have a moderate benefit to wildlife.

Land acquisitions would provide high benefits to wildlife by providing more land under BLM management. Planned actions restricting mining operations (withdrawals, "No Surface Occupancy" stipulations and no mineral material sales) on 95,939 acres would provide high benefits to wildlife habitat by protecting it from disturbance.

Acquisition of water rights would legally ensure a water supply in five streams, affecting 15 priority species. This would result in a moderate benefit.

Cultural/Paleontological Resources - Mineral withdrawal, "No Surface Occupancy" stipulations and closure to mineral material sales would highly benefit the paleontological and cultural resources on 5,935 acres of the 111 Ranch RNA and Bear Springs Badlands ACECs. ACEC management prescriptions for seven areas, totalling 59,916 acres, would provide moderate benefits to cultural resources through protective actions. The action to close three ACECs (the Oak Grove Canyon part of Turkey Creek Riparian, Desert Grasslands RNA and Willcox Playa NNL) to vehicles would moderately benefit cultural resources, preventing damage associated with vehicular use and visitor accessibility.

Construction of Timber Draw dam would result in high impacts to a potentially eligible National Register Archaeological District containing 37 archaeological sites on 1,300 acres. Impacts would be primarily from loss of scientific data due to burial of archaeological resources, inundation and construction effects. Impacts would be reduced through intensive mitigation prior to construction.

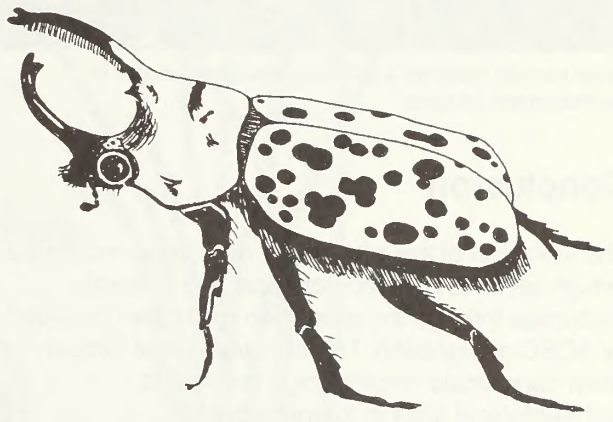
Socio-economic - Mineral withdrawal of 41,123 acres (this figure includes BLM's proposed withdrawals of 29,104 acres and Congressional withdrawals of 12,019 acres for wilderness and wild and scenic rivers), mineral leasing withdrawal of 12,019 acres, "No Surface Occupancy" (NSO) stipulations on 33,323 acres and the prohibition of mineral material sales on 33,512 acres would generally have a low impact on the economy.

The only proposed mineral withdrawal in a "highly favorable" area (terminology by the U.S. Bureau of Mines) is the Gila Wild and Scenic River, cutting through part of the Christmas Mining District. Impacts from this withdrawal would be low because the withdrawal only affects lands within 1/4 mile of the river and the mineral deposits are mostly confined to the area of Christmas Mine, located several miles away.

Five of the areas proposed for withdrawal are in areas of "moderately favorable" potential (Bureau of Mines terminology). Two of these (Eagle Creek Bat Cave ACEC and Yuma Wash) are less than 200 acres. Because very little land would be withdrawn, the impact on mining would be low in these areas. The other three areas (Bowie Mountain Scenic ACEC, Table Mountain RNA ACEC and 111 Ranch RNA ACEC) range from 1,220 to 2,688 acres and thus would have a moderate impact on mining. The Table Mountain Mining District would be impacted by the recommended additions to Aravaipa Canyon Wilderness. The rest of the lands proposed for mineral withdrawal are not in areas with known potential and would, therefore, have a minimal impact on the industry.

The withdrawal of leasable minerals would not impact the economy. The areas proposed for withdrawl are in recommended wilderness areas and wild and scenic rivers. None of these areas have any known leasable energy potential. The only known potential is geothermal energy, which occurs in scattered areas throughout the District. Seven ACECs, particularly the Gila Box ONA ACEC, have geothermal energy potential. Impacts to the industry, however, have been minimized by use of the NSO stipuations in six of the ACECs. No restrictions on leasing are placed on the seventh, the Swamp Springs-Hot Springs Watershed ACEC. Although the NSO stipulation prohibits drilling in the ACECs, horizontal drilling and standard directional drilling practices are allowed from outside the ACECs. With this method, drilling can reach several thousand feet from the drill site to virtually all lands beneath the ACECs.

Mineral materials are found throughout the District and no shortages are expected.



The local economy would receive low benefits from the designation of ACECs, wilderness and wild and scenic rivers. Designation of these areas would result in increased primitive recreation use, adding to the diversification of tourism economies in the local communities.

Impacts to the economy from disposal of public lands would be low. When public lands are exchanged or sold, there could be a decrease in the Payment in Lieu of Taxes (PILT) payment because of the decrease in the acreage of federal land in a county.

When public land is exchanged to the State, however, the loss of PILT money is mitigated by a payment made by the State. State law SB-1231, approved by the Governor on July 13, 1988, provides counties with a payment similar to the federal PILT payment. When public land is transferred to private ownership, the loss of PILT money is compensated by the addition of these lands to the property tax rolls.

Great horned owls are a common nocturnal raptor in southeastern Arizona.

Conclusion

The selection of this alternative would give moderate to high benefits to paleontological and cultural resources through the protection measures provided by ACEC designation. The construction of Timber Draw dam would result in high impacts to archaeological sites in the project area.

The implementation of the *Preferred Alternative* would provide moderate to high benefits to wildlife habitat and riparian vegetation through protection of habitat in ACEC management prescriptions. Restrictions on OHV use and mining and mineral leasing activities would also have high benefits for wildlife habitat by minimizing disturbance of wildlife and their habitat.

Restrictions on mining, mineral leasing activities and OHV use would provide low benefits to soil and water quality. Construction or repair of detention dams would have a moderate benefit to soil retention in the San Simon River channel and the Bear Springs Flat area. Upland vegetation would receive low benefits from land treatments and restrictions on OHV use.

Mineral withdrawals, "No Surface Occupancy" stipulations and restrictions on mineral material sales would have a low impact on segments of the local economy dealing with minerals extraction and exploration.

Increased primitive recreation uses in ACECs, the Galiuro and Aravaipa Canyon Wilderness additions and the Gila Wild and Scenic River would provide low benefits to local communities through diversification of their tourism economies.

Alternative B

Water - Management prescriptions for six ACECs, totalling 169,159 acres, would give low benefits to water quality and quantity. Actions that restrict vehicles to existing roads and trails (1,387,299 acres) or deny their use (12,701 acres) would provide low benefits to water resources by reducing the silt in runoff. Mineral withdrawals (37,056 acres), mineral leasing withdrawals (1,134 acres), "No Surface Occupancy" stipulations for mineral leasing (45,952 acres), and prohibition of mineral material sales (116,707 acres) would reduce soil disturbance, providing moderate benefits for water quality.

Soil - Restrictions of vehicles to existing roads and trails or denying their use on 1,400,000 acres would provide a low benefit to soil by reducing soil disturbance and erosion. The construction of Timber Draw dam and reconstruction of Oso Largo dam would help regrade eroded areas and reduce soil erosion by about 500 acre feet per year and result in a moderate benefit.

Riparian Vegetation - Management of seven ACECs and wild and scenic river status for portions of the Gila and San Francisco Rivers would protect over 4,000 acres of riparian vegetation. These actions would provide a high benefit to riparian vegetation.

Restricting vehicles to existing roads and trails or prohibiting their use in some areas would give a low benefit to riparian zones by minimizing vegetation disturbance.

Private land acquisitions would increase riparian vegetation under BLM management, a moderate benefit. Requiring "No Surface Occupancy" stipulations for mineral leases on 3,797 acres of riparian vegetation would provide low benefits by protecting it from the disturbance of mineral leasing activities.

Unique Waters designations and acquisition of instream flow water rights would provide moderate benefits to riparian vegetation by ensuring a minimum continual flow needed to maintain riparian vegetation communities.

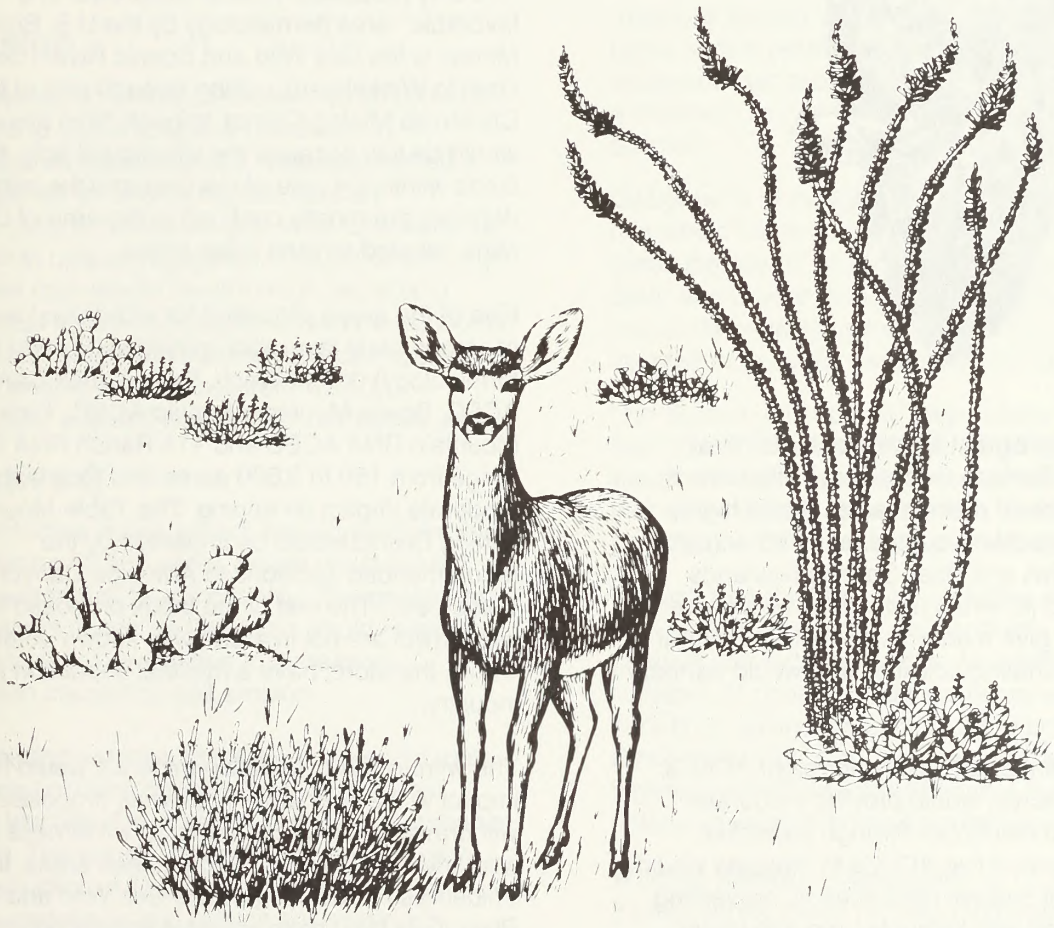
Upland Vegetation - Management prescriptions for Bonita Creek, Aravaipa Watershed and Muleshoe Riparian ACECs (144,154 acres) would enhance the vegetation by increasing the density and diversity of species and result in a low benefit to vegetation. Any successful re-vegetation method implemented on the Bear Springs Flat area that increases vegetation would provide low benefits. Limiting or denying OHV use on 1,400,000 acres would provide low benefits to upland vegetation by protecting it from destruction by vehicles.

Wildlife Habitat - Designation and management of Black Rock RNA, Bonita Creek, Gila Box ONA, Dry Spring RNA, Muleshoe, Guadalupe Canyon ONA, Eagle Creek Canyon, Dos Cabezas Peaks and Bowie Mountain Scenic ACECs (101,739 acres total) would moderately benefit wildlife habitat. Management prescriptions for these areas provide for monitoring water quality, improving riparian vegetation and placing restrictions on mining activities. These prescriptions would benefit 15 priority wildlife species and their habitat.

Closing bighorn sheep lambing areas to vehicles would provide high benefits to the sheep by reducing disturbances during critical periods. OHV limitations and closures would highly benefit 36 priority wildlife species and their habitat.

Management actions planned for priority wildlife species and habitats (spring protection, prescribed burning, etc.) would have a moderate benefit to wildlife.

Disposal of public lands would result in low impacts to wildlife habitat since the land would no longer be under BLM management. Acquisition of State or private lands having wildlife habitat would supply high benefits since these lands would be managed by BLM for the benefit of wildlife.



Mineral withdrawals in 17 areas (37,056 acres) would highly benefit all priority species through protection of their habitat from mining activities. Prohibiting mineral material sales on 116,707 acres would provide habitat protection for 17 species, a moderate benefit. Withdrawal of four areas (1,134 acres) from mineral leasing would produce low benefits for three species. "No Surface Occupancy" stipulations (49,952 acres) would give moderate benefits for 15 species.

Monitoring water quality would give moderate benefits for 17 species in riparian areas by increased water quality protection.

Cultural/Paleontological Resources - Mineral withdrawals, "No Surface Occupancy" stipulations and closure to mineral material sales would highly benefit paleontological resources on 7,128 acres of the 111 Ranch RNA and Bear Springs Badlands ACECs. Proposed minerals restrictions elsewhere in the District would give moderate benefits to cultural resources by eliminating activities that would damage the resource.

ACEC management prescriptions for eight ACECs, totalling 175,462 acres, would provide moderate benefits to cultural resources through protective actions. The closure of five ACECs to vehicles would moderately benefit cultural resources by preventing damage associated with vehicular use and visitor accessibility.

Construction of Timber Draw dam would result in high impacts to a potentially eligible National Register Archaeological District containing 37 archaeological sites on 1,300 acres. Impacts would be primarily from loss of scientific data due to burial of archaeological resources, inundation and construction effects. Impacts would be reduced through intensive mitigation prior to construction.

Socio-economic - ACEC designations and additions to the wilderness and wild and scenic river systems would result in low benefits to the local economy by diversifying recreation opportunities in the area. Increases in primitive recreation use would result in higher local sales from people using these areas.

Mineral withdrawal of 81,451 acres (this figure includes BLM's proposed withdrawals of 37,056 acres and Congressional withdrawals of 44,395 acres for wilderness and wild and scenic rivers), mineral leasing withdrawal of 45,529 acres, "No Surface Occupancy" (NSO) stipulations of 45,952 acres and the prohibition of mineral materials sales on 116,707 acres would generally have a low impact on the economy.

The only proposed mineral withdrawal in a "highly favorable" area (terminology by the U.S. Bureau of Mines) is the Gila Wild and Scenic River (Coolidge Dam to Winkelman), cutting through part of the Christmas Mining District. Impacts from this withdrawal would be low because the withdrawal only affects lands within 1/4 mile of the river and the mineral deposits are mostly confined to the area of Christmas Mine, located several miles away.

Five of the areas proposed for withdrawal are in areas of "moderately favorable" potential (Bureau of Mines terminology). Yuma Wash, Eagle Creek Canyon ACEC, Bowie Mountain Scenic ACEC, Table Mountain RNA ACEC and 111 Ranch RNA ACEC range from 160 to 3,600 acres and thus would have a moderate impact on mining. The Table Mountain Mining District would be impacted by the recommended additions to Aravaipa Canyon Wilderness. The rest of the lands proposed for mineral withdrawal are not in areas with known potential and would, therefore, have a minimal impact on the industry.

The withdrawal of leasable minerals would have a low impact to the economy. The areas proposed for withdrawal are in recommended wilderness areas and wild and scenic rivers. Two of these areas, the Galiuro Wilderness Additions and the Gila Wild and Scenic River (Gila Box) have leasable energy potential. Seven ACECs, particularly the Gila Box ONA ACEC, have geothermal energy potential. Impacts to the

industry, however, have been minimized by use of the NSO stipulation in six of the ACECs. No restrictions on leasing are placed on the seventh, the Muleshoe ACEC. Although the NSO stipulation prohibits drilling in the ACECs, horizontal drilling and standard directional drilling practices are allowed from outside the ACECs. With this method, drilling can reach several thousand feet from the drill site to virtually all lands beneath the ACECs.

Mineral materials are found throughout the District and no shortages are expected.

Impacts to the economy from disposal of public lands would be low. When public lands are exchanged or sold, there could be a decrease in the Payment in Lieu of Taxes (PILT) payment because of the decrease in the acreage of federal land in a county. When public land is exchanged to the State, the loss of PILT money is mitigated by a payment made by the State. State law SB-1231, approved by the Governor on July 13, 1988, provides counties with a payment similar to the federal PILT payment. When public land is transferred to private ownership, the loss of PILT money is compensated by the addition of these lands to the property tax rolls.

Conclusion

The implementation of this alternative would provide high benefits to paleontological resources by protecting known fossil deposits. Moderate benefits would be gained for wildlife habitat, riparian vegetation, cultural resources and soils. Low benefits would result to upland vegetation. The construction of Timber Draw dam would result in high impacts to archaeological sites in the project area. Low economic impacts would result from mineral restrictions. Low economic benefits would result from ACEC, wilderness and wild and scenic river recreation use.

Alternative C

Water - Protective management prescriptions for five ACECs, totalling 69,556 acres, would result in low benefits to water quality and quantity. Designation of 1,311,747 acres "open" to OHV use would result in a low impact to water quality due to increased sedimentation caused by soil erosion.

Soil - Restricting vehicles to existing roads and trails (80,613 acres) or denying their use (7,640 acres) would give low benefits to soil by reducing disturbance and erosion. The construction of Timber Draw dam and reconstruction of Oso Largo dam would help regrade eroded areas and reduce soil erosion in floodplains by about 500 acre feet per year. This would be a moderate benefit.

Riparian Vegetation - Management prescriptions for seven ACECs would allow riparian vegetation to increase from fair to good on 460 acres and maintain or improve other areas in good or better condition, a moderate benefit. Acquisition of instream flow water rights on five perennial streams and four intermittent streams would provide moderate benefits by assuring a minimum flow of water needed for riparian plant species.

Designation of most of the District as "open" for OHV use would cause moderate impacts to 35 riparian areas that would be used by OHVs. Acquisition of State and private lands through exchange would give moderate benefits by the addition of riparian vegetation to public ownership and BLM management.

"No Surface Occupancy" stipulations for mineral leasing activities on 4,316 acres of riparian vegetation would provide a low benefit to riparian areas. Activities that would disturb riparian areas would not be permitted, unless located outside these areas.

Upland Vegetation - The objective of land treatments is to decrease invading woody plants and increase grasses and forbs for wildlife, watershed condition and livestock. Proposed land treatments would have a low benefit on upland vegetation communities. Designation of 1,311,747 acres as "open" to off-highway vehicle use would have a low impact on upland vegetation from vehicular disturbance.

Wildlife Habitat - Designation of 15 ACECs, totalling 81,594 acres, would provide moderate benefits to wildlife habitat by protecting against disturbance and loss of habitat.

Designating 80,613 acres as "limited" to existing roads and trails for OHV use and 7,640 acres as "closed" would provide moderate benefits to 16 priority species by limiting or eliminating disturbance from vehicular use. Designating the remainder of the area "open" to OHVs will have moderate impacts to wildlife due to vehicular disturbance and destruction of habitat.

Disposal of public lands in 9 locations would result in low impacts to desert tortoise and Gila topminnow through loss of habitat from BLM management. High benefits would result from acquisition of habitat through State and private exchanges.

Establishment of right-of-way exclusion areas in Guadalupe Canyon ONA, Bowie Mountain Scenic, Coronado Mountain RNA, 111 Ranch RNA and Peloncillo Mountains ONA ACECs would result in low benefits to wildlife by prohibiting construction of pipelines, powerlines or roads that would disturb habitat.

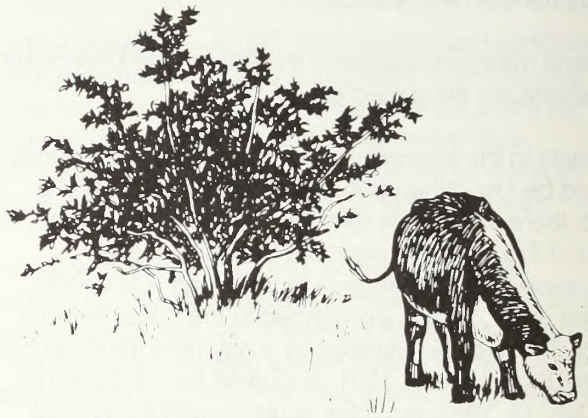
Withdrawal of 2,411 acres from mineral entry, issuing mineral and energy leases with "No Surface Occupancy" stipulations on 21,322 acres and prohibiting the sale of mineral materials on 4,316 acres would result in low benefits for 11 priority species by protecting their habitat from disturbance.

Acquisition of instream flow water rights on five perennial streams and four intermittent streams would provide low benefits to three priority species.

Cultural/Paleontological Resources - Requiring "No Surface Occupancy" stipulations for three archaeological sites (totalling 320 acres) would provide a low benefit to the protection of these sites. Activities associated with mineral leasing would have to take place off-site, eliminating any possible disturbance to cultural resources. Management prescriptions (limiting OHV use, requiring mining plan, etc.) for seven ACECs, totalling 85,722 acres, would provide moderate benefits to cultural and paleontological resources.

Designating most of the District (1,311,747 acres) "open" to OHV use would provide moderate impacts to cultural resources due to increased soil erosion, vandalism and destruction of sites by vehicles. Limiting OHVs to existing roads and trails or closing areas to vehicles in the remainder of the District would provide low benefits to cultural resources by preventing damage associated with vehicular use and visitor accessibility.

Construction of Timber Draw dam would result in high impacts to a potentially eligible National Register Archaeological District that contains 37 archaeological sites on 1,300 acres. Impacts would be primarily from loss of scientific data due to burial of archaeological resources, inundation and construction effects. Impacts would be reduced through an intensive mitigation effort prior to construction.



Socio-economic - The designation of most of the District as "open" for OHV use would have a low benefit to the local economy through OHV sales and ancillary services, such as gasoline and food. Some regional economic benefits would also result.

Mineral withdrawal of 2,411 acres, "No Surface Occupancy" (NSO) stipulations on 21,322 acres and the prohibition of mineral material sales on 4,316 acres would generally have a low impact on the economy.

One area proposed for withdrawal, Bowie Mountain Scenic ACEC, is in an area of "moderately favorable" potential (Bureau of Mines terminology). Because only 2,411 acres of the entire District are proposed for withdrawal, the impact on the mining industry and the economy would be low. The rest of the land proposed for mineral withdrawal are not in areas with known potential and would, therefore, have a minimal impact on the industry.

No leasable mineral withdrawals are proposed under this alternative. Six ACECs, particularly the Gila Box ONA ACEC, have geothermal energy potential. Impacts to the industry, however, have been minimized by use of the NSO stipulation in five of the ACECs. No leasing restrictions are placed on the sixth, the Muleshoe Riparian ACEC. Although the NSO stipulation prohibits drilling in the ACECs, horizontal drilling and standard directional drilling practices are allowed from outside the ACECs. With this method, drilling can reach several thousand feet from the drill site to virtually all lands beneath the ACECs.

Mineral materials are found throughout the District and no shortages are expected.

That portion of the local economy that provides goods and services for primitive recreation users would suffer low impacts because mining and OHV use would degrade the primitive character of parts of the District.

Impacts to the economy from disposal of public lands would be low. When public lands are exchanged or sold, there could be a decrease in the Payment in Lieu of Taxes (PILT) payment because of the decrease in the acreage of federal land in a county. When public land is exchanged to the State, the loss of PILT money is mitigated by a payment made by the State. State law SB-1231, approved by the Governor on July 13, 1988, provides counties with a payment similar to the federal PILT payment. When public land is transferred to private ownership, the loss of PILT money is compensated by the addition of these lands to the property tax rolls.

Conclusion

Management of ACECs would provide moderate benefits to riparian vegetation and cultural and paleontological resources. OHV use, however, would cause moderate impacts to riparian areas, wildlife habitat and cultural and paleontological resources due to disturbance cause by vehicles. The construction of Timber Draw dam would result in high impacts to archeological sites but moderate benefits to soils by regrading a highly eroded area.

Mineral entry withdrawals, "No Surface Occupancy" stipulations for mineral leasing and prohibiting mineral material sales would provide low benefits to riparian vegetation, wildlife and their habitat and cultural and paleontological resources.

That portion of the local economy providing goods and services for OHV users would receive low benefits from the implementation of this alternative. The mineral industry and that part of the local economy providing goods and services to primitive recreation users would suffer a low impact due to decreased opportunities.

Alternative D - No Action

Water - Restricting vehicles to existing roads and trails would reduce erosion, giving low benefits to water quality. Actions taken to protect desert washes would enhance vegetation cover and provide low benefits to water quality by reducing soil erosion. Construction of water control facilities would provide moderate benefits to water quality by reducing the rate of runoff, thereby decreasing the amount of erosion and sediment in the water.

Soil - Restricting vehicles to existing roads and trails would provide low benefits to soil by reducing the amount of erosion caused by physical disturbance of soil surfaces and the destruction of vegetation. Developing grazing management plans would moderately benefit soils by increasing vegetation density and diversity.

Construction of Timber Draw detention dam would moderately benefit soil by reducing erosion. This construction would reduce soil loss by about 300 acre feet per year. A low benefit would be achieved through the use of vegetation manipulation on the Bear Springs Flat area. Increasing vegetation cover would reduce erosion.

Riparian Vegetation - Management of riparian areas as ACECs would moderately benefit riparian vegetation through management prescriptions designed to improve and protect riparian vegetation. These designations would benefit 60 riparian areas covering about 1,267 acres. Management of livestock grazing in riparian areas would highly benefit those areas by providing for improved seedling establishment and increased survival of young plants.

Withdrawing the Gila Box area from mineral entry and requiring a "No Surface Occupancy" stipulation for mineral leasing would provide low benefits to 274 acres of riparian vegetation by reducing disturbance from mining activities. Protection of vegetation cover from livestock grazing at natural and artificial waters would provide low benefits to riparian vegetation.

Designating OHV use as "limited" to existing roads and trails would give low benefits to riparian areas by reducing vegetation disturbance caused by OHVs.

Upland Vegetation - Restricting vehicles to existing roads and trails would give low benefits to vegetation by reducing the disturbance caused by OHVs. Continued development of livestock grazing systems, construction of water control facilities and application of land treatments would give low benefits to vegetation by preventing its destruction and encouraging increased vegetation density and vigor.

Effective wildfire suppression would moderately impact vegetation in the long term by not allowing the natural development of vegetation diversity and control of shrubs by natural fire. In the short term, wildfire suppression would provide low benefits by protecting wildlife habitat and livestock forage from destruction. Vegetation manipulation in the Bear Springs Flat area would give low benefits to the vegetation density and diversity.

Wildlife Habitat - Management of riparian areas as ACECs would moderately benefit wildlife species due to the protection of riparian habitat. Management prescriptions for Mescal Creek and the Gila River would provide a moderate benefit to 17 priority wildlife species found in those areas. Protection or enhancement of riparian areas would moderately benefit those wildlife species dependent upon that habitat type.

Actions to retain or acquire lands important to wildlife would provide high benefits depending upon the wildlife habitat types involved. Providing livestock management, by limiting numbers and season of use, on 10 ephemeral allotments would highly benefit desert tortoise habitat by providing adequate forage at critical times. OHV limitations and closures would highly benefit wildlife habitat.

Management of Bonita Creek for the City of Safford water supply would moderately benefit wildlife habitat by ensuring adequate water and maintenance and improvement of the riparian vegetation. Providing protection of vegetation around natural and artificial waters would provide moderate benefits to wildlife by providing critical food and cover.

Cultural/Paleontological Resources - Restricting vehicles to existing roads and trails would moderately benefit cultural and paleontological resources. Those actions designed to protect riparian areas would provide moderate benefits to cultural and paleontological resources since riparian areas typically have high concentrations of historic and prehistoric archaeological sites.

A withdrawal from mineral entry and "No Surface Occupancy" stipulations for mineral leasing in the Gila Box area would prevent actions that would be damaging to cultural resources, a moderate benefit.

Development of water control facilities in the lower elevations of the Gila Mountains, Bear Springs Flat and Ashurst area would give low benefits to cultural and paleontological resources by reducing soil erosion that destroys the resources. Construction of Timber Draw dam would result in high impacts to a potentially eligible National Register Archaeological District that contains 37 archaeological sites on 1,300 acres. Impacts would be primarily from loss of scientific data due to burial of archaeological resources, inundation and construction effects.

Socio-economic - Mineral entry withdrawals and "No Surface Occupancy" stipulations for mineral leasing in the Gila Box would have a low impact on the economy due to lost opportunities for mineral exploration and development. Designation of wild and scenic rivers and ACECs would provide low benefits to the diversification of local tourism economies from increased primitive recreation use of these areas.

Conclusion

Adoption of this alternative would provide low benefits to water resources by controlling OHV activity that causes soil erosion and sedimentation of streams and rivers. This alternative would also provide moderate benefits to soil, wildlife habitat, riparian vegetation and cultural and paleontological resources. The construction of Timber Draw dam would result in high impacts to archaeological sites in the project area.

Mining and mineral leasing restrictions would cause low impacts to the economy. Designation of wild and scenic rivers and ACECs would provide low benefits to the economy of local tourism industries.

Mitigating Measures

No specific mitigation measures have been identified in this RMP/EIS that would reduce the anticipated impacts of implementing the *Preferred Alternative*. Mitigation will be incorporated when BLM begins implementing the specific actions of the RMP. At that time, an environmental assessment will be prepared to analyze the expected impacts of each project and identify needed mitigation measures to deal with those impacts.

Unavoidable Adverse Impacts

The following impacts are expected to remain when the Preferred Alternative is implemented and the mitigation measures developed by BLM are applied. Designation of Dry Spring RNA and Swamp Springs/ Hot Springs Watershed ACECs would result in the loss of 2,760 animal unit months (AUMs) of forage for livestock grazing. The loss of these AUMs would have a high economic impact on the ranchers involved but a low impact to the regional economy. Closure of ACECs to mineral entry, mineral leasing or mineral material sales would result in low impacts to the local economy.

Short-Term Use Versus Long-Term Productivity

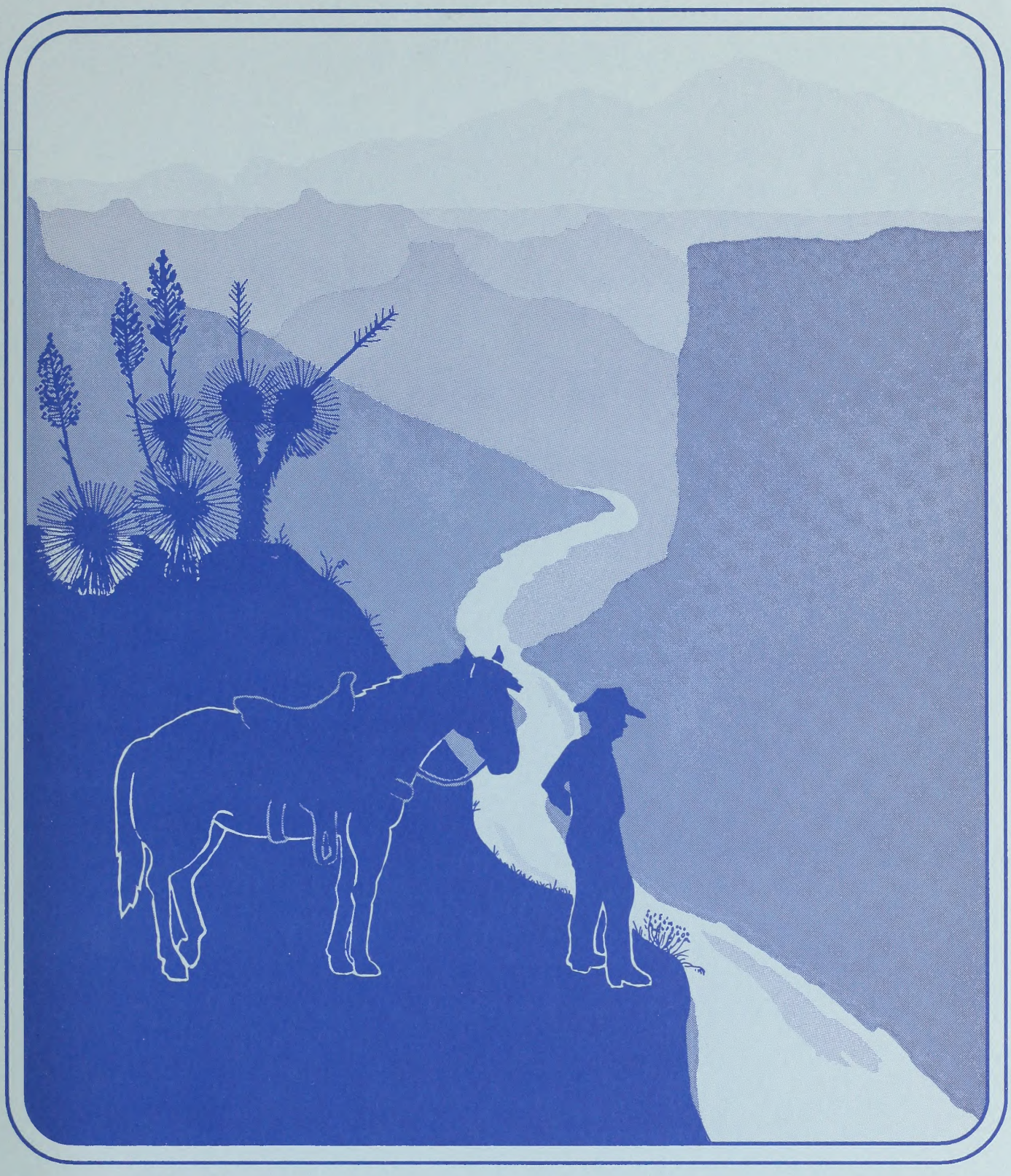
Proposed disposals of public land would increase resource management efficiency in the short and long term. Acquisitions, through State and private exchanges, would also improve the management efficiency of the public lands.

Proposed land treatments and detention dams would destroy vegetation in the short term but would improve productivity of the land in the long term. Firewood cutting would increase the short-term use of the cutting areas but would not affect the long-term productivity.

Irreversible and Irretrievable Commitments of Resources

Implementation of the *Preferred Alternative* would result in the following irreversible and irretrievable commitments of resources. Soil erosion, caused by OHV use on 1,708 acres designated "open", would be an irreversible and irretrievable commitment of resources.

Land disposals would cause the permanent loss of those lands from public use because most disposals are by State or private exchange. Disposal of lands containing archaeological or paleontological resources to private entities would result in the loss or destruction of those resources since they would no longer be under BLM protection. Any disturbance to cultural or paleontological resources would be irreversible. Any loss of those resources would be irretrievable and they could not be replaced. Construction of Timber Draw dam would result in irreversible and irretrievable losses to archaeological sites.



CONSULTATION & COORDINATION

5

Introduction

The *Safford District Resource Management Plan/ Environmental Impact Statement* (RMP/EIS) was prepared by an interdisciplinary team of resource specialists from the Gila Resource Area, the San Simon Resource Area, and District Resources Staff. Writing the RMP/EIS began in September, 1988 following a process beginning in 1987 that included a series of public scoping meetings, interagency coordination and the preparation of the management situation analyses. Coordination and consultation efforts have continued throughout the planning process.

Scoping and Public Participation

The District invited public participation throughout the development of this RMP/EIS. The following list summarizes the actions taken.

September, l987	Mailout and news release advising public of intent to develop a plan and EIS and to invite them into the process.
September, 1987	Notice of Intent to Prepare the Safford District Resource Management Plan published in Federal Register.
Oct. 27-Nov. 5, l987	Public scoping meetings held in Safford, Willcox, Bisbee, Tucson, Winkelman and Mesa, Arizona.
January 21, 1988	Scoping meeting with Arizona Game and Fish Dept.
February 12, 1988	Safford District Grazing Board briefing.
March 11, 1988	Safford District Advisory Council briefing.
April 1, 1988	Draft issues and concerns sent to public for review.
November, 1988	Final issues and concerns sent to public.

In addition, BLM specialists have met with interested parties in the field and other locations. Consultations with Arizona Game and Fish Department, Arizona State Land Department, U.S. Forest Service and Soil Conservation Service to coordinate data collection, planned actions and to exchange information have taken place on a routine basis.

List of Agencies, Organizations and Persons to Whom Copies of This Document Have Been Sent

Federal Agencies

Advisory Council on Historic Preservation
Department of Agriculture
- Animal and Plant Health Inspection Service (APHIS)
- Forest Service
- Soil Conservation Service

Department of Defense
- Army Corps of Engineers
- U.S. Air Force

Department of Energy
Department of the Interior
- Bureau of Mines
- Bureau of Indian Affairs
- Bureau of Land Management, Phoenix District, Arizona
- Bureau of Land Management, Las Cruces District, New Mexico
- Bureau of Reclamation
- Fish and Wildlife Service (Ecological Services)
- Geological Survey
- National Park Service

Department of Transportation
Federal Aviation Administration
Environmental Protection Agency

Arizona State Agencies

Arizona Commission of Agriculture and Horticulture
Arizona Department of Health Services
Arizona Department of Library, Archives and Public Records
Arizona Department of Mines and Mineral Resources
Arizona Department of Transportation
Arizona Game and Fish Department
Arizona Natural Heritage Program
Arizona Office of Economic Planning and Development
Arizona Oil and Gas Commission
Arizona Outdoor Recreation Coordinating Commission
Arizona State Clearinghouse
Arizona State Historic Preservation Office
Arizona State Land Commissioner
Arizona State Parks Board
Arizona State University
Arizona Water Resources Department
Bureau of Geology and Mineral Technology
Governor of Arizona

Arizona State Agencies (cont.)

Governors Commission on Arizona Environment
Mineral Resource Department
Northern Arizona University
University of Arizona

New Mexico State Agencies

New Mexico State Historic Preservation Officer

Local Agencies

City of Benson
City of Bisbee
City of Clifton
City of Douglas
City of Duncan
City of Morenci
City of Safford
City of Sierra Vista
City of Tombstone
City of Willcox
City of Winkelman
Cochise County Board of Supervisors
Cochise County Planning and Zoning Department
Gila County Board of Supervisors
Gila County Planning and Zoning Department
Graham County Board of Supervisors
Graham County Planning and Zoning Department
Greenlee County Board of Supervisors
Greenlee County Planning and Zoning Department
Pinal County Board of Supervisors
Pinal County Planning and Zoning Department
Southeast Arizona Governments Organization

Indian Tribes and Councils

Ak-Chin (Maricopa) Papago
Gila River Pima Tribal Council
San Carlos Apache Tribal Council
Salt River Pima Tribal Council
Tohono O'odham (Papago) Tribal Council
White Mountain Apache Tribal Council

Other Organizations

Abel's Guiding and Outfitting
Alamo Ranch Company
American Motorcyclist Association
Aravaipa Homeowner's Association
Arizona Archaeological Council
Arizona Cattlegrowers Association
Arizona Desert Bighorn Sheep Society
Arizona Desert Racing Association
Arizona Mining Association
Arizona Native Plant Society
Arizona Riparian Council
Arizona Small Miners and Prospectors Association
Arizona Whitewater Expeditions
Arizona Wildlife Federation
ASARCO, Inc.
Bella Vista Ranches, Ltd.
Bob's Bargain Barn
BP Minerals America
Cochise-Graham County Cattlegrowers Association
Columbia Gas and Development Corporation
Cyprus Minerals Company
Defenders of Wildlife
Earth First!
El Paso Natural Gas Company
Graham County Electric Cooperative
Greater Arizona Bicycling Association
Greenlee County Cattlegrowers Association
Homestake Mining Company
Huachuca Audubon Society
Huachuca Hiking Club
J&J Cattle Company
Kennecott Exploration
Kerr-McGee Corporation
Magma Copper Company
Maricopa Audubon Society
McDonald Cattle Company
Muleshoe Ranch
National Audubon Society
National Off-Road Bicycle Association
National Parks and Conservation Association
National Public Lands Task Force
National Wildlife Federation
Natural Resource Defense Council
Nevada Outdoor Recreation Association
Northern Arizona Audubon
Oak Ranch
Pacific Western Land Company
Phelps Dodge Corporation
Public Service Company of New Mexico
Reevis Mountain School of Self Reliance
San Manual Arizona Railroad Company
Sierra Club
Sierra Cycles
Sierra Ready Mix
Sonoran Resources
Southern Arizona Hiking Club
Southwest Gas Company
Southwestern Research Station (American Museum of Natural History)
Sulphur Springs Valley Electric
Tenneco Arizona Property Corporation
The Amerind Foundation
The Nature Conservancy
The Wilderness Society
True Oil Company
Tucson 4-Wheelers
Tucson Audubon Society
Tucson Electric Power Company

Other Organizations (cont.)

Tucson Rod and Gun Club
Valley Telephone Cooperative, Inc.
Whole Earth Adventures, Inc.
Wick Broadcasting, Inc.
X-X Partnership
ZR Hereford Ranch
Yuma Audubon Society

Elected Representatives

Federal

Representative Jim Kolbe
Representative Jon Kyl
Representative John Rhodes
Representative Bob Stump
Representative Morris K. Udall
Senator Dennis DeConcini
Senator John McCain

State

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Representative Bill English
Representative Reuben Ortega
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APPENDICES

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Appendix 1

Locations for Acquisition of Legal Access

Locations for Acquisition of Legal Access - Alternatives A and C

Legal access will be acquired across private, State or Indian Reservation lands, for public and administrative vehicular use, in the following locations. Use the enclosed Land Status Map (inside back cover) to locate the private, State or Indian Reservation lands included in these descriptions.

1. Murray Springs Road - T. 21 S., R. 21 E., Sec. 26.

2. Guadalupe Canyon Road - T. 24 S., R. 32 E., Secs. 14, 15, 16, 21.

3. Baker Canyon Road - T. 23 S., R. 32 E., Sec. 31; T. 23 S., R. 31 E., Sec. 1.

4. Emigrant Canyon Road - T. 14 S., R. 28 E., Secs. 25, 36; T. 14 S., R. 29 E., Sec. 31; T. 15 S., R. 29 E., Secs. 3, 4, 5, 6, 10.

5. Buckeye Canyon Road - T. 13 S., R. 27 E., Secs. 26, 27, 34; T. 14 S., R. 27 E., Sec. 9.

6. Mascot Mine Road - T. 14 S., R. 27 E., Secs. 16, 21, 28, 29.

7. Mineral Park Road - T. 14 S., R. 26 E., Secs. 8, 9, 11, 14, 15, 16.

8. Happy Camp Canyon Road - T. 13 S., R. 28 E., Secs. 3, 7, 8, 9.

9. Walnut Gulch Road - T. 13 S., R. 26 E., Secs. 23, 26, 35.

10. Little Doubtful Canyon Road - T. 12 S., R. 32 E., Secs. 26, 27, 35.

11. Doubtful Canyon Road - T. 12 S., R. 32 E., Sec. 35; T. 13 S., R. 32 E., Secs. 3, 9.

12. West Peloncillo Mountains Roads, including Midway Canyon - T. 12 S., R. 31 E., Secs. 11, 12, 13, 24; T. 12 S., R. 32 E., Secs. 7, 18.

13. Day Ranch Road - T. 10 S., R. 32 E., Secs. 21, 29.

14. Upper San Francisco River Road - T. 3 S., R. 30 E., Secs. 20, 29 32; T. 4 S., R. 29 E., Secs. 12, 13; T. 4 S., R. 30 E., Secs. 5, 6, 7, 18, 19, 30.

15. Black River Road - T. 4 S., R. 28 E., Secs. 25, 26; T. 4 S., R. 29 E., Secs. 19, 20, 30.

16. Upper Bonita Creek Road - T. 4 S., R. 27 E., Secs. 27, 34; T. 5 S., R. 27 E., Secs. 3, 10, 11, 14, 23.

17. West Ranch Road - T. 5 S., R. 26 E., Secs. 26, 35; T. 6 S., R. 26 E., Secs. 2, 33; T. 7 S., R. 26 E., Sec. 4.

18. Black Point Road - T. 6 S., R. 25 E., Sec. 7.

19. New Bryce Road - T. 6 S., R. 25 E., Sec. 6.

20. Red Knolls Road - T. 5 S., R. 23 E., Sec. 25; T. 5 S., R. 24 E., Secs. 30, 31.

21. Black Rock Road - Across San Carlos Apache Indian Reservation and private lands along Black Rock Wash.

22. Goodwin Wash Road - Across San Carlos Apache Indian Reservation and private lands along Goodwin Wash.

23. Whittaker Ranch Road - T. 6 S., R. 17 E., Secs. 17, 19, 20.

24. Rug Road - T. 7 S., R. 18 E., Sec. 14; T. 8 S., R. 18 E., Sec. 1, 5, 12, 13, 14, 15, 16.

25. Old Aravaipa Road - T. 5 S., R. 19 E., Secs. 24, 25, 26, 36.

26. Dry Camp Road - T. 6 S., R. 19 E., Secs. 5, 8.

27. Wagner Ranch Road - T. 6 S., R. 17 E., Secs. 13, 23, 24.

28. Oak Spring Canyon Road - T. 6 S., R. 17 E., Sec. 26; T. 6 S., R. 18 E., Secs. 31, 32.

29. Wood Ranch Road - T. 6 S., R. 17 E., Secs. 23, 24.

30. Upper Deer Creek Road - T. 6 S., R. 19 E., Sec. 3; T. 5 S., R. 19 E., Sec. 34.

31. Gila River Road below Coolidge Dam - T. 3 S., R. 18 E., Secs. 17, 18.

32. El Capitan Road - T. 2 S., R. 15 E., Secs. 23, 25, 26.

33. Cutter Road - Across San Carlos Apache Indian Reservation and private lands from Cutter to Mescal Creek.

34. Chilito Mine Road - T. 4 S., R. 15 E., Secs. 22, 23, 27, 34; T. 5 S., R. 15 E., Secs. 2, 9, 11.

35. Cherry Springs Canyon Road - T. 12 S., R. 20 E., Secs. 4, 9.

36. Jackson Cabin Road - T. 12 S., R. 20 E., Secs. 11, 12, 13; T. 12 S., R. 21 E., Secs. 19, 30, 31; T. 13 S., R. 21 E., Secs. 5, 6.

37. Muleshoe Pipeline Road - T. 12 S., R. 21 E., Sec. 31.

Locations for Acquisition of Legal Access - Alternative B

1. Murray Springs Road - T. 21 S., R. 21 E., Sec. 26.

2. Guadalupe Canyon Road - T. 24 S., R. 32 E., Secs. 14, 15, 16, 21.

3. Emigrant Canyon Road - T. 14 S., R. 28 E., Secs. 25, 36; T. 14 S., R. 29 E., Sec. 31; T. 15 S., R. 29 E., Secs. 3, 4, 5, 6, 10.

4. Buckeye Canyon Road - T. 13 S., R. 27 E., Secs. 26, 27, 34; T. 14 S., R. 27 E., Sec. 9.

5. Mascot Mine Road - T. 14 S., R. 27 E., Secs. 16, 21, 28, 29.

6. Mineral Park Road - T. 14 S., R. 26 E., Secs. 8, 9, 11, 14, 15, 16.

7. Walnut Gulch Road - T. 13 S., R. 26 E., Secs. 23, 26, 35.

8. Doubtful Canyon Road - T. 12 S., R. 32 E., Sec. 35; T. 13 S., R. 32 E., Secs. 3, 9.

9. West Peloncillo Mountains Roads, including Midway Canyon T. 12 S., R. 31 E., Secs. 11, 12, 13, 24; T. 12 S., R. 32 E., Secs. 7, 18.

10. Day Ranch Road - T. 10 S., R. 32 E., Secs. 21, 29.

11. Upper San Francisco River Road T. 3 S., R. 30 E., Secs. 20, 29 32; T. 4 S., R. 29 E., Secs. 12, 13; T. 4 S., R. 30 E., Secs. 5, 6, 7, 18, 19, 30.

12. Black River Road - T. 4 S., R. 28 E., Secs. 25, 26; T. 4 S., R. 29 E., Secs. 19, 20, 30.

13. Upper Bonita Creek Road - T. 4 S., R. 27 E., Secs. 27, 34; T. 5 S., R. 27 E., Secs. 3, 10, 11, 14, 23.

14. West Ranch Road - T. 5 S., R. 26 E., Secs. 26, 35; T. 6 S., R. 26 E., Secs. 2, 33; T. 7 S., R. 26 E., Sec. 4.

15. Black Point Road - T. 6 S., R. 25 E., Sec. 7.

16. New Bryce Road - T. 6 S., R. 25 E., Sec. 6.

17. Red Knolls Road - T. 5 S., R. 23 E., Sec. 25; T. 5 S., R. 24 E., Secs. 30, 31.

18. Black Rock Road - Across San Carlos Apache Indian Reservation and private lands along Black Rock Wash.

19. Goodwin Wash Road - Across San Carlos Apache Indian Reservation and private lands along Goodwin Wash.

20. Whittaker Ranch Road - T. 6 S., R. 17 E., Secs. 17, 19, 20.

21. Rug Road - T. 7 S., R. 18 E., Sec. 14; T. 8 S., R. 18 E., Sec. 1, 5, 12, 13, 14, 15, 16.

22. Dry Camp Road - T. 6 S., R. 19 E., Secs. 5, 8.

23. Wagner Ranch Road - T. 6 S., R. 17 E., Secs. 13, 23, 24.

24. Wood Ranch Road - T. 6 S., R. 17 E., Secs. 23, 24.

25. Upper Deer Creek Road - T. 6 S., R. 19 E., Sec. 3; T. 5 S., R. 19 E., Sec. 34.

26. Gila River Road below Coolidge Dam - T. 3 S., R. 18 E., Secs. 17, 18.

27. Cutter Road - Across San Carlos Apache Indian Reservation and private lands from Cutter to Mescal Creek.

28. Jackson Cabin Road - T. 12 S., R. 20 E., Secs. 11, 12, 13; T. 12 S., R. 21 E., Secs. 19, 30, 31; T. 13 S., R. 21 E., Secs. 5, 6.

29. Muleshoe Pipeline Road - T. 12 S., R. 21 E., Sec. 31.

Appendix 2

ACEC Evaluations

Black Rock Research Natural Area 186
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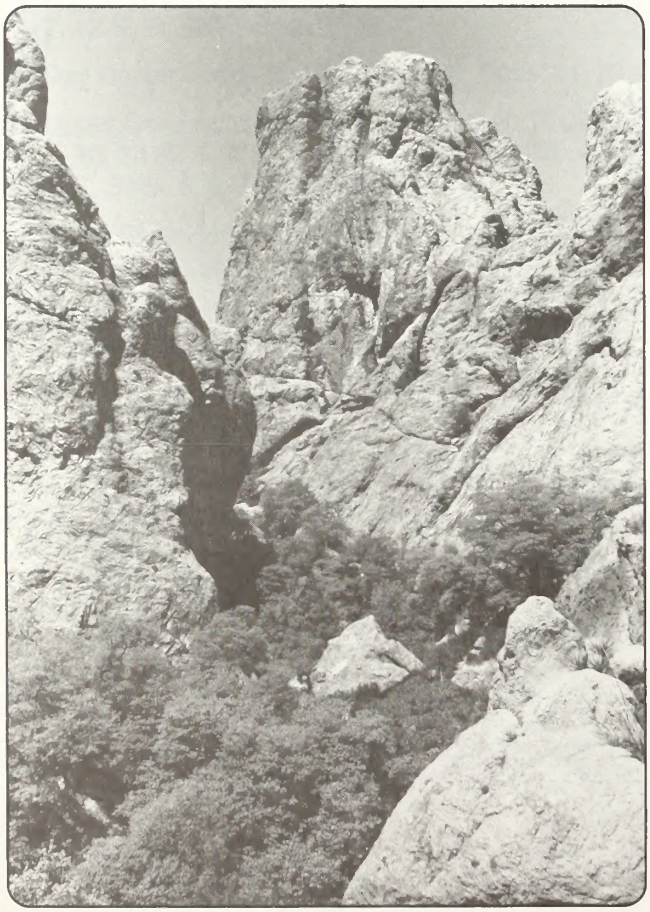
APPENDIX 2

Black Rock Research Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard** - The nominated ACEC centers on a 600 foot rhyolite volcanic plug used by nesting raptors and nearly ringed by a unique plant community. The volcanic plug is habitat for peregrine falcons, a federally endangered species. Other raptors using the cliffs are golden eagles, prairie falcons, red-tailed hawks and kestrels. The additional moisture and cold air drainage produced by the cliffs appear responsible for a chokecherry-oak woodland not recorded elsewhere in the Southwest. This area was identified as a potential ACEC as a result of BLM inventories.

This area meets the relevance criterion because it has a fish and wildlife resource in peregrine falcons. The area also has a natural process or system in the unique chokecherry-oak woodland.

The importance criterion is met because the area contains a more than locally significant quality that gives it distinctiveness in the chokecherry-oak woodland plant community not found elsewhere in the Southwest. The community is unique and vulnerable to adverse change.



A unique chokecherry-oak woodland surrounds the base of Black Rock.

2. **Relationship to Other Areas of Special Management** - The nominated ACEC is totally surrounded by the Black Rock WSA, recommended for wilderness designation.

3. **Rationale for Designation** - The 189-acre Black Rock RNA ACEC should be designated so special management can prevent adverse impacts to special resources. Special management is warranted since only Congress has the authority to designate wilderness and a decision not to designate would leave the proposed area without the necessary special management. Wilderness regulations, however, allow special management prescriptions within zones and this could be tailored to meet the needs of the proposed ACEC should Congress so designate.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

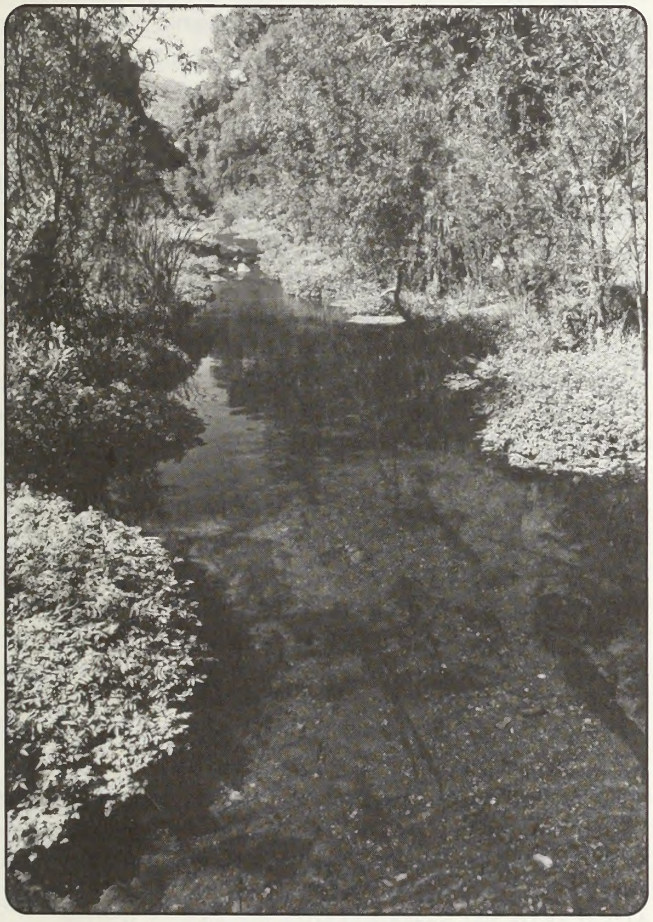
- restrict entry to the ACEC from February 1 to August 30 to reduce disturbance to T&E species.
- manipulate vegetation on the brushy slopes below the chokecherry-oak woodland (outside the ACEC) to reduce the fuel load and potential for adverse fire effects on the unique plant community.
- withdraw the area from mineral entry.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- restrict vegetation research to non-manipulative, natural process methods.
- prohibit woodcutting and gathering.
- should Congress designate the Black Rock WSA wilderness, necessary management prescriptions for protection of resources will be incor porated into the wilderness management plan and ACEC status will be dropped.
- manage the area as a Visual Resource Management Class II area to preserve the scenic quality.

5. **Alternatives Considered:** *Alternative B* would increase the size of the ACEC to 309 acres to include more of the adjacent hillside. Livestock will be excluded and the ACEC status would be retained if Congress designated the Black Rock WSA a wilderness. *Alternative C* would not restrict seasonal entry, require a mining plan of operations for all future mining activity, designate the area "Closed" to OHV use and regulate woodcutting consistent with authorization in the surrounding area.

Bonita Creek ACEC

1. **Description of the Value, Resource, System or Hazard** - Bonita Creek runs 15 miles from the San Carlos Indian Reservation to the Gila River. Resources include habitat for State and federally listed and proposed T&E wildlife species (bald eagle, peregrine falcon, razorback sucker, Gila chub, yellowbilled cuckoo, belted kingfisher and black hawk), 15 miles of riparian habitat, a perennial creek with water quality qualifying for State Unique Water designation, National Register quality cultural resource sites, an area with one of the highest numbers of breeding bird species found in the U.S., the greatest standing crop biomass of fishes recorded in a Southwestern stream and a very scenic canyon. The City of Safford depends on Bonita Creek for the majority of its domestic water supply. This area was identified as a potential ACEC as a result of BLM inventories.

This area meets the relevance criterion because it contains a significant cultural value in its archaeological sites and significant scenic values in the rugged canyon with a running stream and riparian vegetation. The area also has a fish and wildlife resource in the federally listed and proposed threatened and endangered species of wildlife, the high numbers of breeding birds and the quantity of fishes found in the stream. In addition, the area has a natural process or system in the perennial stream with its associated riparian vegetation. Bonita Creek also qualifies under the State Unique Waters designation.



Bonita Creek supplies Safford with municipal water, nourishes lush riparian vegetation and supports a wide variety of fish and wildlife.

This area meets the importance criterion in that it has more than locally significant qualities in the threatened and endangered wildlife, riparian habitat, archaeological sites, perennial stream with high water quality, breeding bird numbers, scenic canyon and native fishes. These same qualities make the area fragile, exemplary and vulnerable to adverse change.

2. **Relationship to Other Areas of Special Management** - The mouth of Bonita Creek is within the proposed Gila Box ACEC and the Gila Box Wild and Scenic River study segment.

3. **Rationale for Designation** - Bonita Creek requires designation and special management to protect and enhance the natural and cultural values present in the canyon area. The diverse uses and high values require a level of attention far above management prescriptions of surrounding areas. The ACEC should include approximately 1,572 acres in Bonita Creek Canyon.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- stabilize and/or realign the road in the bottom of the canyon using local material as needed.
- withdraw the area from mineral entry.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- restrict recreational developments to locations below the City of Safford water collection system.
- monitor water quality and provide input to activity plans to maintain the desired water conditions.
- manage the area to accelerate recovery of riparian vegetation to reach good ecological condition by 1997.
- initiate scientific research on the area's cultural resources.
- initiate a monitoring program on the area's cultural resources.
- implement those actions specific to the Bonita Creek ACEC from the Cultural Resources Management Plan entitled *Cultural Properties in the Gila Resource Area with Standing Architectural*

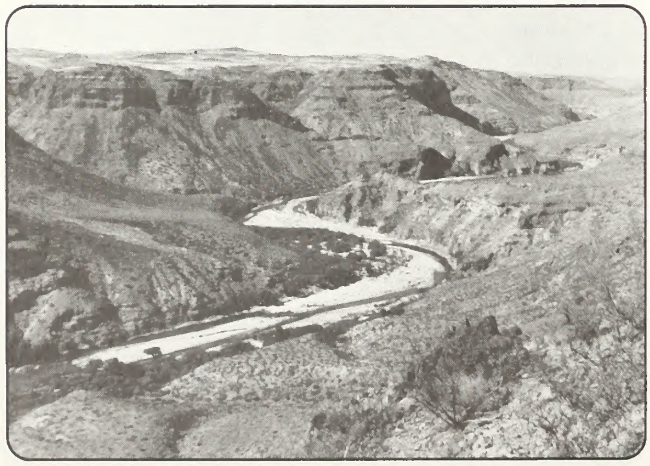
Structures, including data recovery, archaeological testing, stabilization and installation of anti-vandalism and interpretive signs.
- acquire private lands, as they become available, within the ACEC.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- designate the area "Limited" to off-highway vehicle use. Limit OHVs to existing roads and trails.
- designate the area as a Visual Resource Management Class II area to preserve the scenic quality.

5. **Alternatives Considered** - In *Alternative B*, the entire 30,240 acre watershed will be designated as an ACEC. In addition to the special management in the canyon, management in uplands would include acquisition of private lands within the watershed, management to accelerate rehabilitation of upland vegetation communities, stabilization of roads and earthen dams to reduce erosion and designation as a VRM Class III area.

The special management in *Alternative C* differs from *Alternative A* in that mineral resources would be managed solely in accord with 3809 regulations and decisions in this document, and by permitting mineral sales and leasing on a case-by-case basis.

Gila Box Outstanding Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard** - The Gila Box area is well known for its many significant values. The area contains riparian vegetation along the rivers and is known for the overlap of Sonoran and Chihuahuan Desert vegetation. The Gila Box contains a number of mesquite bosques significant to wildlife and an increasingly rare vegetation community. The area has moderate to high values in known and projected prehistoric archaeological sites and in the numerous historic sites. The rivers may support populations of the threatened loach minnow and spikedace. Endangered bald eagles winter in this area. The area has significant features in the highly eroded volcanic and conglomerate geological formations. Also included is the "last free-flowing stretch of the Gila River in Arizona". The Gila and San Francisco Rivers are both perennial. The area is notable for its wildlife populations, especially raptors like the black and zone-tailed hawks and bald eagles. The twisting canyons, steep cliffs, erosional features, vegetation, flowing streams and geological formations combine to make this an outstanding scenic area. Finally, the Gila Box is used extensively for recreation, including floatboating, hiking, picnicking, fishing and OHV use. This area was identified as a potential ACEC as a result of BLM inventories.



The winding Gila River passes through the Gila Box, a popular stretch of river for seasonal rafting and kayaking.

This area meets the relevance criterion because it has significant historic values (numerous homesteading sites), prehistoric values (numerous known and projected archaeological sites) and scenic values (twisting canyons with erosional features, perennial streams and interesting geological formations). It also has a fish and wildlife resource in the native fish and bald eagles.

This area meets the importance criterion because it has more than locally significant qualities in the "last free-flowing stretch of the Gila River in Arizona", the perennial condition of the rivers and the outstanding scenic quality of the area. The bald eagles, perennial streams, fishery resource and the scenic qualities are all sensitive and vulnerable to adverse change, especially from surface disturbing activities.

2. **Relationship to Other Areas of Special Management** - A portion of the area was evaluated for wilderness designation, though none of the area was recommended. This area is also being studied for possible designation under the Wild and Scenic Rivers Act. The Gila Box was proposed as an Outstanding Natural Area in past planning efforts. This area also includes about 10 acres of mesquite bosques nominated as a separate ACEC but included in this evaluation.

3. **Rationale for Designation** - The Gila Box area should be designated as an Outstanding Natural Area ACEC of 12,784 acres because the special values identified above meet the relevance and importance criteria and are in need of special management for their protection and enhancement. In addition, the

Gila Box is a well known canyon area of concern to many people both in and out of Arizona, making it a highly sensitive area.

4. **Special Management Provisions** - The management prescription in the *Preferred Alternative* is to:

- withdraw the area from mineral entry.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- designate the area "Limited" to off-highway vehicle use. Limit vehicle use to existing roads and trails.
- acquire private inholdings, as they become available.
- prohibit authorization of rights-of-way.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- manage the area as a Visual Resource Management Class II area to preserve the scenic qualities of the Gila Box.

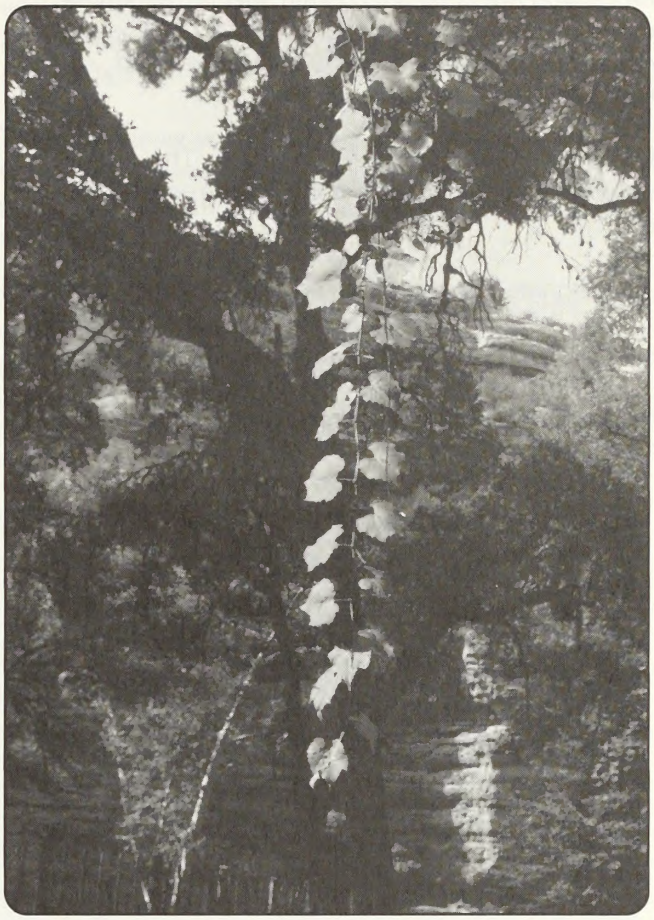
5. **Alternatives Considered** - *In Alternative B*, an ACEC would be established to include 14,034 acres of public land. This alternative includes the lands in the *Preferred Alternative*, as well as additional lands along the San Francisco River. The management prescription would be the same as under the *Preferred Alternative* with the following exceptions: the river bottoms would be closed to off-highway vehicle use; wildfires in riparian areas would be suppressed; and authorization of rights-of-way would be prohibited in the ACEC outside the existing AEPCO right-of-way.

In *Alternative C*, an ACEC would be established on 10,062 acres of public land. This alternative excludes the upper ends of both the San Francisco and Gila Rivers. The management prescription would be the same as under the *Preferred Alternative* with the following exceptions: the area would not be withdrawn from mineral entry; a mining plan of operations is required for all future mining activity; the area would not be closed to mineral material sales; and authorization of rights-of-way would not be prohibited.

Turkey Creek Riparian ACEC

1. **Description of the Value, Resource, System or Hazard** - Protection and enhancement of riparian vegetation is a high priority for BLM. Turkey, Oak Grove and Maple Canyons contain riparian communities, wildlife, cultural and scenic resources that warrant ACEC designation. This area was identified as a potential ACEC as a result of BLM inventories and by a nomination from The Nature Conservancy.

This area meets the relevance criterion because it has significant cultural and scenic values, a wildlife resource and a natural process or system in the riparian vegetation.



Tall sycamores and other riparian species line Turkey Creek canyon. This ACEC contains wildlife, recreational and cultural resources of regional significance.

The importance criterion is met because the canyons have more than locally significant qualities in the cultural resources, riparian vegetation, wildlife and scenery. These qualities also make the area fragile, sensitive and vulnerable to adverse change.

2. **Relationship to Other Areas of Special Management** - The Aravaipa Canyon Wilderness adjoins portions of the proposed ACEC. The recommended ACEC boundary is a portion of a 40,000 acre ACEC proposed by The Nature Conservancy.

3. **Rationale for Designation** - The Turkey Creek riparian area should be designated an ACEC since sensitive resources require special management for

protection and enhancement. Maple Canyon contains a high quality mixed broadleaf riparian community that includes big-toothed maple at its lowest known elevation in Arizona. Turkey Creek and Oak Grove Canyon contain riparian, wildlife, cultural and scenic values that require special management of recreation, livestock, access and vegetation to improve ecological conditions in the 2,326 acre area. The watersheds of the canyon areas do not contain special resources and will be properly managed to protect downstream values according to decisions of the *Preferred Alternative*.

4. **Special Management Provisions** - The management prescription in the *Preferred Alternative* is to:

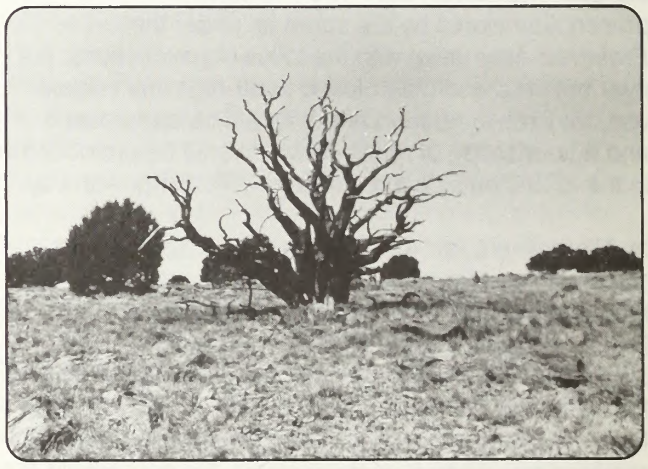
- designate the area "Limited" to off-highway vehicle use. Limit vehicle use to existing roads and trails.
- close Oak Grove Canyon (in the ACEC) to vehicle use beyond the Oak Grove Canyon corral.
- prohibit surface occupancy for mineral leasing activity.
- manage livestock to avoid yearlong use, but permit such use as needed for livestock management purposes.
- monitor water quality and provide input to activity plans to maintain the desired water conditions.
- manage the area to accelerate recovery of riparian vegetation to reach good ecological condition by 1997.
- acquire adjacent riparian areas and lands within the watershed, as they become available.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- manage the area as a Visual Resource Management Class II area to preserve scenic quality.

5. **Alternatives Considered** - In *Alternative B,* an ACEC would be established to include the approximate 70,000 acres of public lands in the Aravaipa Watershed. Livestock grazing on the South Rim Allotment would be suspended for the life of this plan except for the terms of the existing permit. Adjacent lands in the watershed will be acquired from willing owners. Upland vegetation communities will be rehabilitated using fire, mechanical, structural and chemical treatments. Roads and earthen dams will be stabilized to reduce erosion. BLM will integrate watershed treatments with livestock allotment management plans and other activity plans and will develop cooperative agreements with adjacent landowners. Management will emphasize rehabilitation and protection of upland and riparian areas using active management to accelerate processes.

In *Alternative C,* the ACEC will encompass primarily the 40,000 acres on the south rim of Aravaipa Canyon. This proposal is coupled with designation of no additional wilderness. Management emphasis will be to accelerate rehabilitation of the upland areas by initiating cooperative livestock and watershed management research with Forest Service, TNC and universities. Best management techniques will be developed and initiated to speed vegetative recovery and permit use of resources. Riparian habitat will be managed similar to methods in *Alternative A.*

Table Mountain Research Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard** - The area was nominated by The Nature Conservancy due to the presence of two important plant communities. The top of Table Mountain contains an alligator juniper savanna, a plant community known from less than 20 locations. The adjoining Sycamore and Saddle Canyons contain a white oak woodland containing Mexican blue oak at the northernmost limit of its range.



Large junipers die of old age but are not consumed by fire in the alligator juniper savannah plant community atop Table Mountain.

This area meets the relevance criterion because it contains a natural process or system in the presence of two plant communities.

The importance criterion is met because the two plant communities have more than locally significant qualities giving them special worth and distinctiveness.

2. **Relationship to Other Areas of Special Management** - The nominated area is separate from all other proposed areas. The area originally nominated by TNC included approximately 40,000 acres on the south rim of Aravaipa Canyon and portions of the north rim. This boundary is retained in *Alternative C* for the Turkey Creek ACEC, however the *Preferred Alternative* includes only the areas with special resources. In *Alternative B* the Table Mountain RNA ACEC would be within the 70,000 acre Aravaipa Watershed ACEC.

3. **Rationale for Designation** - The Table Mountain RNA ACEC should be designated to manage the special botanical values within the 1,220 acre boundary. The plant communities represent important public resources that require management different from surrounding public lands if they are to be maintained.

4. **Special Management Prescription** - The special management prescription in the *Preferred Alternative* is to:

- designate the area "Limited" to off-highway vehicle use. Limit vehicle use to existing roads and trails.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- prepare a prescribed burn plan that will allow fire to continue its role in the ecology of the ACEC.
- manage livestock to limit concentrated use.
- withdraw the area from mineral entry.
- close the area to vegetative sales.
- limit research to the effects of natural processes on this plant community.

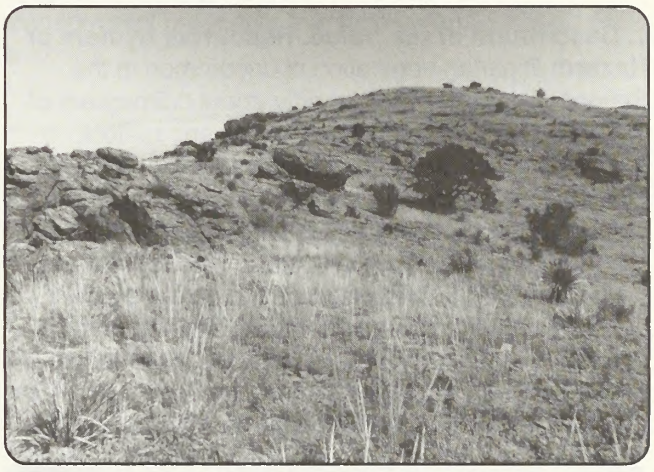
5. **Alternatives Considered** - In *Alternative B*, management would differ in that the area would be withdrawn from mineral entry, no surface occupancy would be permitted for mineral leasing activities, livestock would be excluded from the area and the area would be an RNA within the Aravaipa Watershed ACEC. In *Alternative C*, the differences are that a mining plan will be required for all operations and the area would be an RNA within the South Rim ACEC.

Desert Grasslands Research Natural Areas ACEC

1. **Description of the Value, Resource, System or Hazard** - Desert grasslands on upland soils provide the majority of grazing lands in the desert southwest, provide critical habitat for 13 State listed wildlife species and are important for watershed stabilization. Relict grasslands provide baseline conditions on which to establish management objectives and gauge management progress. Retention of some undisturbed desert grassland areas is of value to BLM management and scientific research. Three areas (two are on isolated buttes and the other on top of a steep ridge) represent minimally disturbed desert grasslands on two different soils. This area was identified as a potential ACEC as a result of BLM inventories and by a nomination from The Nature Conservancy.

The area meets the relevance criterion because it contains a natural process or system in the relict grasslands. These grasslands are in three locations on two soil types.

The importance criterion is met because the area contains more than locally significant qualities that give it special worth and distinctiveness in the relict grasslands. These grasslands are also sensitive, rare or vulnerable to adverse change.



Sombrero Butte is one of the three relict desert grasslands included in the proposed Desert Grasslands RNA ACEC. The isolated butte has remained virtually undisturbed, providing opportunities for scientific studies.

2. **Relationship to Other Areas of Special Management** - None.

3. **Rationale for Designation** - Special management is required to maintain these relict areas for research purposes and to permit only those research projects that would not adversely impact current conditions. The ACEC will encompass 380 acres on Mescal Ridge; 90 acres on the Pilares; and on Sombrero Butte, 60 acres of BLM, plus 60 acres of private and 240 acres of State land to be acquired.

4. **Special Management Prescription** - Management focus will be to protect the relict grasslands from

human-caused disturbances while providing research opportunities. The management prescription in the *Preferred Alternative* is to:

- withdraw 380 acres in the Mescal Ridge Grassland from mineral entry.
- acquire adjacent State and private parcels, as they become available.
- prepare a prescribed burn plan that will allow fire to continue its role in the ecology of the ACEC.
- limit research to the effects of natural processes on the grasslands.

5. **Alternatives Considered** - In *Alternative B*, management will designate the area "Closed" to OHV use, close the area to mineral material sales and prohibit surface occupancy for mineral leasing in addition to prescriptions in *Alternative A*. *Alternative C* differs in that mining will be regulated by requirements in the 3809 regulations.

Dry Spring Research Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard:** Riparian vegetation is uncommon in the Safford District, comprising only about 0.5 percent of the area. Undisturbed riparian areas are seldom documented because of the many uses of the water they surround. Five minimally impacted springs are found in a small area due to the presence of the Gila River nearby, vertical or very steep slopes isolating them from surrounding areas, lack of mineralization and soils that are so non-productive that little forage is found in the vicinity. Initial vegetative studies indicate a stable community of scientific and management value for study of baseline condition of the mixed broadleaf riparian vegetation community. This area was identified as a potential ACEC as a result of BLM inventories.

A relatively undisturbed mixed broadleaf riparian area at Dry Spring provides an example of excellent riparian condition upon which the success of riparian restoration can be gaged.

This area meets the relevance criterion because it contains a natural process or system in the undisturbed riparian areas.

The importance criterion is met because of the more than locally significant qualities in the undisturbed riparian areas. These riparian areas are also fragile, rare, exemplary and vulnerable to adverse change.

2. **Relationship to Other Areas of Special Management** - The nominated ACEC is completely within the Needles Eye WSA, recommended for wilderness designation.

3. **Rationale for Designation** - The Dry Spring riparian area should be designated due to the presence of special resources requiring special management. Approximately 825 acres will be included. The Bureau's national objective of restoring 75 percent of riparian vegetation to ecological good or excellent condition by 1997 requires relict areas on which to gauge progress. These areas are also of value to other researchers investigating riparian vegetation or dependent wildlife.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- withdraw the area from mineral entry.
- prohibit packstock from leaving designated trails.
- construct and maintain hiking trails to minimum standards through the riparian areas.
- prohibit woodcutting and gathering.
- prepare a prescribed burn plan that will allow fire to continue its role in the ecology of the ACEC.
- exclude livestock.
- limit research to the effects of natural process on riparian areas.
- should Congress designate the Needles Eye Wilderness Area, the required special management prescriptions for the ACEC will be incorporated into the wilderness management plan and the ACEC status will be eliminated. Should wilderness not be designated, VRM Class II standards will be retained.

5. **Alternatives Considered** - In *Alternative B*, the management prescription will be similar to *Alternative A* except that ACEC status and special management will be retained even if Congress designates Needles Eye Wilderness and additional

restrictions will be placed on mineral activities. Under *Alternative C*, management will differ in that minerals will be managed under 3809 regulations, livestock will be excluded only from riparian areas, packstock will be permitted within the ACEC and the boundary will include approximately 90 acres around the riparian zones.

Swamp Springs-Hot Springs Watershed ACEC

1. **Description of the Value, Resource, System or Hazard** - Portions of the area were identified by BLM as a potential ACEC based on riparian, wildlife and scenic values. A larger area was recommended by The Nature Conservancy for the above resources plus cultural and watershed values. Review of the areas determined that the important cultural resources are located on private lands and the scenic values are of only local importance. The significant resources are located in the major riparian areas of the Swamp Springs and Hot Springs drainages and include riparian vegetation, communities of five species of native fishes and raptor nesting habitat.

Management of Swamp Springs-Hot Springs watershed will accelerate recovery of riparian vegetaion that provides raptor nesting habitat and stabilizes drainages supporting five native fish species.

This area meets the relevance criterion because it contains a fish and wildlife resource of native fish and nesting raptors. The area also contains a natural process or system in the riparian vegetation.

The importance criterion is met because of the more than locally significant qualities of riparian vegetation, native fish and breeding raptors. These qualities are also fragile, sensitive, rare and vulnerable to adverse change.

2. **Relationship to Other Areas of Special Management** - Part of the proposed ACEC, east of the Jackson Cabin Road and adjacent to the existing Forest Service Galiuro Wilderness, was determined to be suitable for designation as wilderness. The ACEC boundaries proposed by BLM and TNC were adjusted to include other riparian areas with special resources and lands in between them that could be managed to enhance those resources. Excluded were lands that could not be effectively managed or those that did not add to the protection of important riparian resources.

3. **Rationale for Designation** - The special resources found in the Swamp Springs and Hot Springs drainages require special management. Portions of the watershed also require special management attention to aid ecological stability and increase the speed of riparian recovery. Some adjoining areas have been included to link the important riparian areas and to increase management efficiency. A 22,883 acre ACEC should be designated, including 17,438 acres of BLM and 4,478 acres of TNC and 967 acres of State land, to be acquired.

4. **Special Management Provisions** - The management prescription in the *Preferred Alternative* is to:

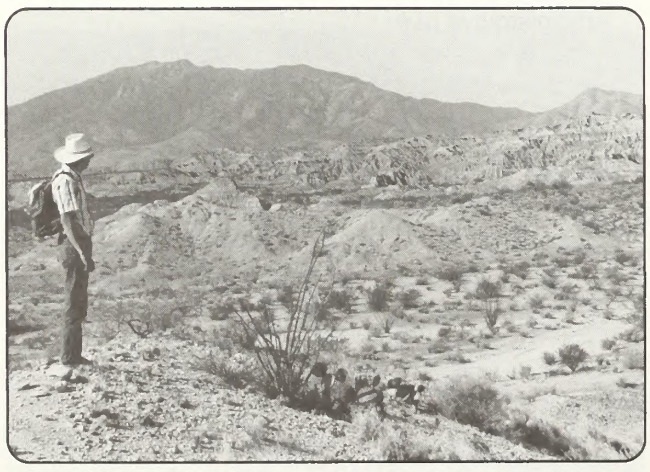
- manage the area to accelerate recovery of riparian vegetation to reach good ecological condition by 1997.
- exclude livestock to facilitate rehabilitation of riparian and upland vegetation communities within the ACEC.
- manage the area to accelerate recovery of upland vegetation communities.
- acquire legal public access on the Jackson Cabin Road where it crosses private lands. Maintain this road to a 4-wheel drive standard for public and administrative use.
- acquire legal administrative access on the Pipeline Road where it crosses private land. Maintain this road to a 4-wheel drive standard.
- exchange public lands south and east of Bass and Hot Spring Canyons for private lands north and west of the canyons.
- recreation, scientific and administrative uses compatible with protection of the riparian resources and restoration of upland vegetation will be permitted.
- require a mining plan of operation for all future mining activity.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- designate the area "Limited" to off-highway vehicle use. Limit vehicles to existing roads and trails. Designate the riparian area of Hot Springs Canyon "Closed" to OHV use.

5. **Alternatives Considered** - Under *Alternative B* the entire Muleshoe Ranch would be designated as an ACEC and the State land to be acquired on Redfield Creek would be included in the boundary. The size of the ACEC would be approximately 26,000 acres. Management would emphasize rehabilitation of riparian and upland communities using mechanical, chemical, fire, vegetative and livestock management methods. ACEC status will be retained on lands designated wilderness.

In *Alternative C* only the lands containing the larger riparian areas will be included in the ACEC boundary. This covers 9,156 acres (with 770 acres owned by TNC) within Hot Springs and Swamp Springs Canyons and adjoining riparian areas. Management emphasis will be to achieve ecologically good riparian condition by 1997. Management action will be initiated to: acquire private lands as they become available; exclude livestock from the ACEC; limit OHV use to existing roads and trails; develop cooperative management agreements with adjacent landowners; and permit recreational, scientific and administrative uses compatible with protection and management of riparian resources.

Bear Springs Badlands ACEC

1. **Description of the Value, Resource, System or Hazard** - The nominated ACEC is located in a geological badlands setting composed of ridges, small mesas, hillocks, spires and other erosional landforms. The geologic strata in these landforms are extremely well delineated and many can be seen several miles away due to their contrasting and visually impressive assortment of colors (green, orange and yellow hues).



The colorful erosional landforms of Bear Springs Badlands contain highly significant fossiled bones of extinct animals and rare preserved trackways of camel, horse and other mammals.

The fossilized bones of Blancan Age mammals that lived approximately 3-4 million years ago are exposed on many of the erosional landforms. Fossilized bones include those from elephant-like mammals *(Gomphotheriid)*, three-toed horse *(Nannippus phlegon)*, camel *(Hemiquchenia and Camelops)* and *Pliohippus* (horse). Also located in the badlands are the fossilized tracks of camel and horse *(Equus)*.

This badlands area was identified as a potential ACEC as a result of BLM inventories showing the high scientific and public values of its paleontological resources. Specifically, its fossil bones are potentially capable of providing substantive information about vertebrate evolution. The fossilized tracks represent one of the few places in North America where one can see such excellent examples of preserved mammal trackways.

This area meets the relevance criterion because it contains a significant scenic value in the impressive erosional features. The area also has a natural process or system in the Class I fossils and tracks of various Blancan Age mammals.

The importance criterion is met because of the more than locally significant Class I fossils and tracks. The fossils and tracks are also fragile, sensitive, rare, exemplary and vulnerable to adverse change.

2. **Relationship to Areas of Other Special Management** - None.

3. **Rationale for Designation** - Bear Springs Badlands should be designated an ACEC due to the presence of scientifically important Class I fossils dating to the late Tertiary geologic period. Areas such as these should be preserved for scientific study because they provide one of the best records of mammalian communities during that period. Further, the fossilized tracks provide a rare opportunity to study and appreciate the interaction of animals that lived millions of years ago.

The nominated ACEC contains 2,927 acres under the *Preferred Alternative*. Under this alternative, an additional 320 acres of State land in the north half of Section 9 in Township 7 South, Range 23 East would be added if acquired.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- intensively inventory the paleontological resources to determine their nature and extent.

- require a paleontological collection permit for all fossil collecting.
- facilitate scientific and recreational use of the area.
- manage the area as a Visual Resource Management Class II area to preserve its scenic quality.
- prohibit road construction.
- designate the area "Limited" to off-highway vehicle use. Limit vehicles to existing roads and trails.
- mitigate livestock and soil erosion control actions that will have adverse impacts on fossils.
- withdraw the area from mineral entry.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.

5. **Alternatives Considered** - *Alternative B* would include about 4,127 acres. The management prescription would be similar to the *Preferred Alternative* except it would limit vehicle use to that necessary for administrative purposes. *Alternative C* would include about 2,007 acres. Management differs primarily in that 3809 regulations would be used to manage mining activity.

Guadalupe Canyon Outstanding Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard** - This area has a number of special resources, including: an overlap of Chihuahuan, Rocky Mountain and Sierra Madrean vegetation; an extensive riparian forest dominated by sycamores; unconfirmed reports of jaguars and Mexican wolves, both endangered species; one of the premier birdwatching areas in Arizona; and numerous species of Mexican wildlife, especially birds, that enter the U.S. in only a few places. The area was identified as a potential ACEC as a result of BLM inventories and by a nomination from The Nature Conservancy.

This area meets the relevance criterion because it has significant wildlife resources in the numerous species that enter the U.S. from Mexico, including threatened and endangered animals. The area also has a unique natural system in the overlap of Chihuahuan, Rocky Mountain and Sierra Madrean vegetation communities.

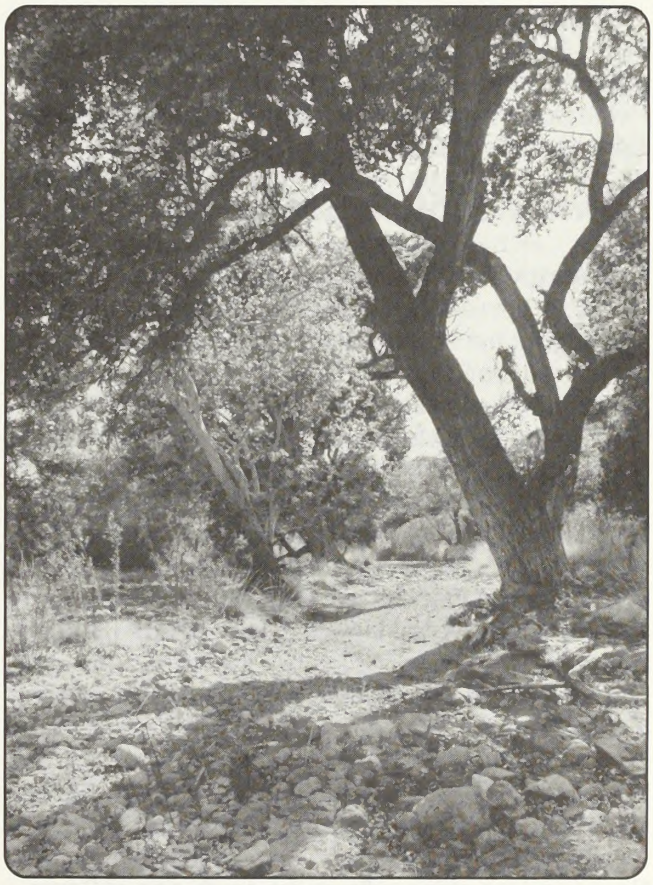
This area meets the importance criterion because it has more than locally significant qualities (threatened and endangered animals, unique botanical and wildlife representations and a riparian area along Guadalupe Creek). These same qualities are, in some cases, endangered and vulnerable to adverse change.

Guadalupe Canyon is widely known as one of the premier birdwatching areas in the U.S. National priority concerns include the protection of riparian areas and for threatened and endangered species.

2. **Relationship to Other Areas of Special Management** - The lands in Guadalupe Canyon are adjacent to public lands in New Mexico that are designated as an Outstanding Natural Area. Nearby is a Forest Service zoological/botanical area in upper Guadalupe Canyon.

3. **Rationale for Designation** - The area should be designated as an ACEC of 989 acres because the special values identified above meet the relevance and importance criteria; it needs special management for the protection and enhancement of these values; and is perceived by the public as a highly sensitive area. BLM has completed one land exchange and is contemplating additional acquisitions specifically for these high-value resources.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:



The sycamore-dominated riparian area of Guadalupe Canyon provides a migration corridor for many Mexican wildlife species.

- withdraw 378 acres in the riparian area from mineral entry. Require a mining plan of operations for all future mining activity in the remainder of the ACEC.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- designate the area "Limited" to off-highway vehicle use. Limit vehicle use to existing roads and trails.
- develop and implement an allotment management plan to manage live stock.
- prepare a prescribed burn plan that will allow fire to continue its role in the ecology of the ACEC.
- acquire private inholdings, as they become available.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- manage the area as a Visual Resource Management Class II area to preserve the scenic and natural quality of Guadalupe Canyon.
- prohibit authorization of rights-of-way.

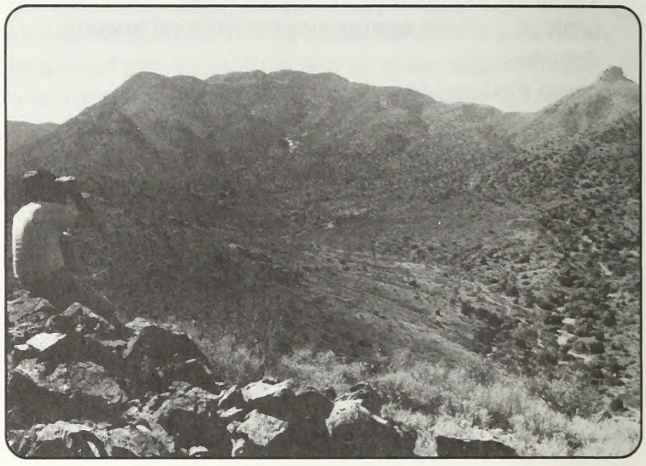
5. **Alternatives Considered** - In *Alternative B* an ACEC would be established to include 5,838 acres of public lands. This alternative includes the lands in the *Preferred Alternative*, as well as additional lands in the Baker Canyon drainage. The management prescription would be the same as under the *Preferred Alternative*. *Alternative C* is the same as the *Preferred Alternative*.

Bowie Mountain Scenic ACEC

1. **Description of the Value, Resource, System or Hazard** - Bowie Mountain was proposed as an ACEC primarily for the scenic values in the natural setting that surrounds Ft. Bowie National Historic Site. Additional scenic values are found in the steep cliffs on the south side of Bowie Mountain. BLM currently has a protective buffer on 590 acres surrounding parts of the National Historic Site. In addition, there are historic heliograph stations on Bowie Mountain and Helens Dome. The entire area has historical connections to the fort. This area has past use by peregrine falcons, both for nesting and migration, and the habitat may be reoccupied in the future. This area was identified as a potential ACEC as a result of BLM inventories.

This area meets the relevance criterion in that it has significant historic features (heliograph stations) and significant scenic values (the natural setting around Ft. Bowie and the steep cliffs on the south side of Bowie Mountain).

This area meets the importance criterion because any surface disturbing activity in the viewshed would cause adverse change to the scenic qualities now found in the area. The maintenance of the natural setting was recognized in the San Simon MFP through the establishment of a protective buffer around Ft. Bowie National Historic Site. The ACEC proposal seeks to expand that protection to the entire viewshed, as well as to the highly scenic southern slopes of Bowie Mountain.



Bowie Mountian and Helen's Dome provide a scenic backdrop and recreational opportunities adjacent to Ft. Bowie National Historic Site.

2. **Relationship to Other Areas of Special Management** - Much of the proposed ACEC is within the Bowie Mountain Wilderness Study Area, an area not recommended for wilderness designation. In addition, 590 acres are currently within the protective buffer around Ft. Bowie National Historic Site.

3. **Rationale for Designation** - The lands in the Bowie Mountain area should be designated as an ACEC of 4,190 acres because the special values identified above meet the relevance and importance criteria and are in need of special management to protect these values. Both the public and the National Park Service have expressed concerns about retaining the natural setting around Ft. Bowie, thereby making this a highly sensitive area.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- withdraw 2,230 acres in the viewshed of Ft. Bowie National Historic Site from mineral entry. Require a mining plan of operations for all future mining entry in the remainder of the ACEC.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.

- designate the area "Limited" to off-highway vehicle use. Limit vehicles to existing roads and trails.
- suppress wildfire to protect the scenic backdrop to, and structures in, the Ft. Bowie National Historic Site.
- acquire private inholdings, as they become available.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- manage the area as a Visual Resource Management Class I area to preserve the scenic backdrop to Ft. Bowie National Historic Site.
- prohibit authorization of rights-of-way.

5. **Alternatives Considered** - *Alternative B* involves the same acreage as the *Preferred Alternative*. The only difference in the management prescription is that the entire 4,190 acres are withdrawn from mineral entry. In *Alternative C* the ACEC would include only 2,562 acres and focus on the Ft. Bowie viewshed. The management prescription is the same as for the *Preferred Alternative*.

Coronado Mountain Research Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard:** This area was nominated by BLM due to the presence of important plant communities. Coronado Mountain contains a unique plant association of Arizona cypress and Mexican pinyon in a climax condition. The area also contains both pointleaf and Pringle's manzanita, species poorly represented in other RNAs in Arizona. Intermixed with the manzanitas is an interesting population of netleaf oaks growing as shrubs. The area is also of interest for studies of the primary and secondary succession of plant communities impacted by fire. This area was identified as a potential ACEC as a result of BLM inventories.

Coronado Mountain contains a unique climax plant association of Arizona cypress and Mexican pinyon, along with manzanitas and netleaf oaks.

This area meets the relevance criterion in that it has a natural process or system in the unique plant association of Arizona cypress and Mexican pinyon. It also has the potential for studies of primary and secondary succession in a fire impacted plant community.

This area meets the importance criterion in that the plant characteristics listed above are of more than local significance and have qualities or circumstances that make it unique. This area can make a significant addition to the plant communities and species found in the RNA network.

2. **Relationship to Other Areas of Special Management** - Only about half of the top of Coronado Mountain is under BLM management and being considered for ACEC designation. The other half of the mountain is under management of the Apache-Sitgreaves National Forests.

3. **Rationale for Designation** - The lands in the Coronado Mountain area should be designated as a Research Natural Area ACEC of 120 acres because the identified special values meet the relevance and importance criteria and are in need of special management to protect these values.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- require a mining plan of operations for all future mining activity.
- prepare a prescribed burn plan that will allow fire to continue its role in the ecology of the ACEC.
- prohibit woodcutting and gathering.
- manage the area as a Visual Resource Management Class II area to preserve the scenic and natural qualities of the ACEC.
- prohibit authorization of rights-of-way.

5. **Alternatives Considered** - *Alternative B* is the same as the *Preferred Alternative*. In *Alternative C* only 50 acres would be designated with the management prescription the same as under the *Preferred Alternative*.

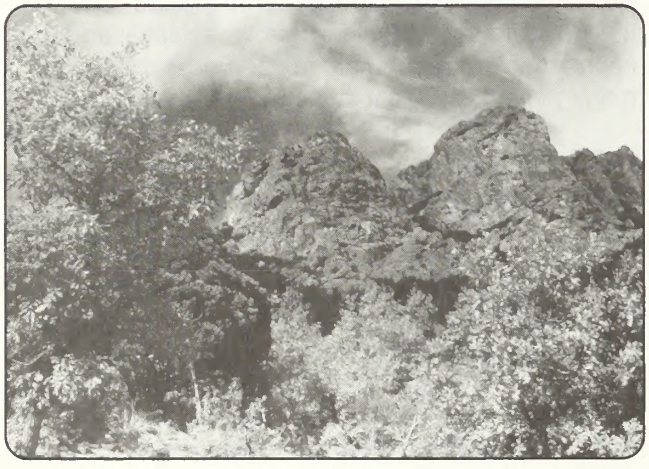
APPENDIX 2

Dos Cabezas Peaks ACEC

1. **Description of the Value, Resource, System or Hazard** - The Dos Cabezas Peaks are a noteworthy landmark, both currently and historically. The area contains a small relict grove of aspens and a number of plants normally found in coniferous forest associations, now missing from this range. Because of these plants, the area has some potential for research on processes and interrelationships of isolated and relict species. The type and size of the rock outcroppings are noteworthy. The peaks can be seen from long distances and are quite scenic. This area was identified as a potential ACEC as a result of BLM inventories.

This area meets the relevance criterion on two points. It has significant scenic value in that the peaks are well known and a highly visible landmark. It also shows evidence of relict plants from the wetter and cooler climates of 15,000 to 20,000 years ago and, as such, fits into the natural process or system characteristic.

This area meets the importance criterion in that it is sensitive and vulnerable to adverse change, especially from surface disturbing activities.



The scenic rock outcroppings of Dos Cabezas Peaks are a highly visible landmark. The area contains relict plants which offer research potential.

2. **Relationship to Other Areas of Special Management** - None.

3. **Rationale for Designation** - The Dos Cabezas Peaks should be designated as an ACEC of 25 acres because the special values identified above meet the relevance and importance criteria and are in need of special management to protect these values.

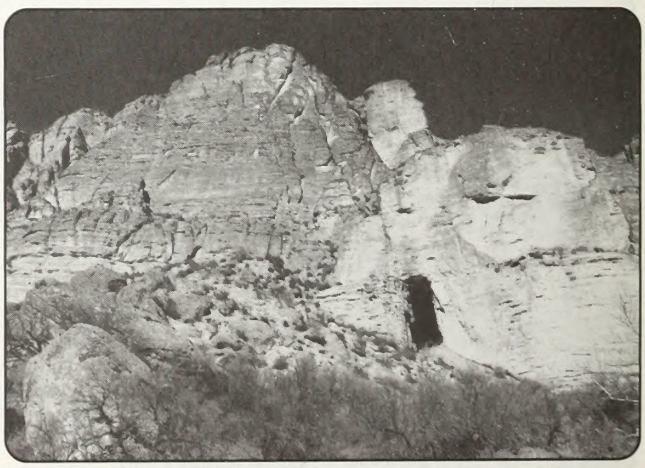
4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- require a mining plan of operations for all future mining activity.
- designate the area "Limited" to off-highway vehicle use. Limit vehicle use to existing roads and trails.
- prepare a prescribed burn plan that will allow fire to continue its role in the ecology of the ACEC.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- manage the area as a Visual Resource Management Class II area to preserve the scenic quality of the ACEC.
- prohibit authorization of rights-of-way.

5. **Alternatives Considered** - *Alternative B* is the same as the *Preferred Alternative*. In *Alternative C* the area is not considered for designation as an ACEC but allocated to mineral development.

Eagle Creek Bat Cave ACEC

1. **Description of the Value, Resource, System or Hazard** - This area has one significant value. The Eagle Creek Bat Cave is a maternity cave for the Mexican free-tailed bat, a species in serious decline throughout its range. This area was identified as a potential ACEC as a result of BLM inventories and from a nomination from the Arizona Game and Fish Department.



Eagle Creek Bat Cave is a maternity cave for the Mexican free-tailed bat, a species in serious decline throughout its range.

This area meets the relevance criterion in that it has a wildlife resource in the Mexican free-tailed bats, a rapidly declining species.

This area meets the importance criterion because there is cause for concern over the Mexican free-tailed bats and their maternity cave. The bats are a rapidly declining species that is vulnerable to adverse change.

2. **Relationship to Other Areas of Special Management** - This area is part of a larger area proposed as an Outstanding Natural Area in past planning efforts.

3. **Rationale for Designation** - The Eagle Creek Bat Cave should be designated as an ACEC of 40 acres because the special values identified above meet the relevance and importance criteria and the area is in need of special management for the protection of these values.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

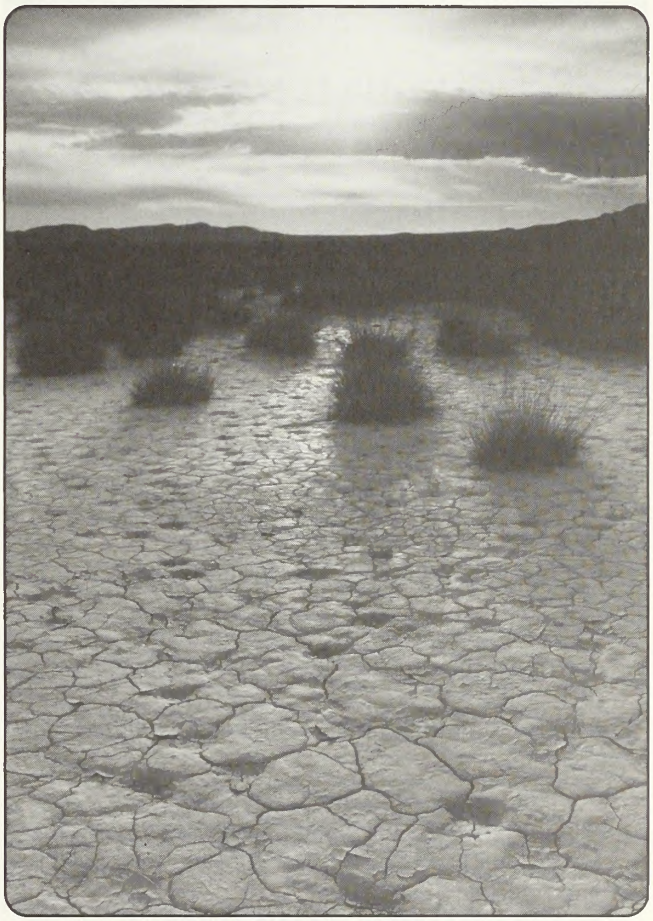
- withdraw the area from mineral entry.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- acquire private lands at the mouth of the cave, as they become available.
- manage the area as a Visual Resource Management Class II area to preserve the scenic and natural values.
- prohibit guano extraction from the cave.
- monitor and patrol the cave to detect and prevent adverse impacts to the cave and the bats.

5. **Alternatives Considered** - In *Alternative B*, an ACEC would be established on 3,160 acres of public land in Eagle Creek Canyon. Included in this acreage is the Eagle Creek Bat Cave, as well as those public lands forming the canyon. Additional values to be protected under this alternative include: prehistoric and historic archaeological sites; a wintering population of endangered bald eagles; interesting and highly eroded conglomerate and volcanic geological formations; and a significant scenic resource. The management prescription is the same as under the *Preferred Alternative* with the exception of land acquisition. The acquisition area includes State and private lands in most of the canyon from the Apache-Sitgreaves National Forests to Eagle Creek's confluence with the Gila River.

Alternative C includes the same lands as the *Preferred Alternative*. The management prescription is similar to that of the *Preferred Alternative* with the following exceptions: the area is not withdrawn from mineral entry; a mining plan of operations is required for all future mining activity; the area is not closed to mineral material sales; and guano extraction is permitted if it will not adversely impact the bat population.

Willcox Playa National Natural Landmark ACEC

1. **Description of the Value, Resource, System or Hazard** - The Willcox Playa is a designated National Natural Landmark (NNL). The NNL program recognizes significant natural features throughout the country. A register of NNLs is maintained by the National Park Service. The Willcox Playa is recognized primarily for its geological values, that being a remnant Pleistocene lake and a typical example of playa lakes in the Southwest. The playa



Plants have adapted to the harsh environment of Willcox Playa, a remnant of a Pleistocene lake, which supports several rare endemic insects and crustaceans.

is also of interest because of plants adapting to playa conditions. There is good potential for archaeological sites around the edges of the playa. The area is occasionally visited by the endangered whooping crane. The Croton Springs area (on private land) has been the scene of studies on deposits of prehistoric pollen. Several rare endemic species of insects and crustaceans are known from the playa. This area was identified as a potential ACEC as a result of BLM inventories and from a nomination from The Nature Conservancy.

This area meets the relevance criterion because it is representative of a natural process or system (a typical Southwestern playa lake and a remnant of a Pleistocene lake) and also a fish and wildlife resource (occasional use by whooping cranes and the presence of rare endemic insects and crustaceans).

This area meets the importance criterion because it has more than locally significant qualities in its designation as a National Natural Landmark, giving it special worth and meaning. The botanical, cultural and wildlife values are sensitive, rare, unique and/or vulnerable to adverse change.

2. **Relationship to Other Areas of Special Management** - The Willcox Playa is a designated National Natural Landmark.

3. **Rationale for Designation** - The lands in the Willcox Playa NNL should be designated as an ACEC of 2,475 acres because the special values identified above meet the relevance and importance criteria and are in need of special management.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- withdraw the area from mineral entry.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- designate the area "Closed" to off-highway vehicle use.
- acquire State and private lands as they become available.
- prohibit woodcutting and gathering.
- manage the area as a Visual Resource Management Class II area to preserve its scenic and natural values.
- prohibit authorization of rights-of-way.

5. **Alternatives Considered** - This area would retain its NNL designation in the No Action Alternative. *Alternative B* is the same as the *Preferred Alternative*. In *Alternative C* the area is not considered for designation as an ACEC, but allocated to off-highway vehicle use.

111 Ranch Research Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard** - The 111 Ranch area contains an extensive and significant deposit of Blancan Age mammal and other fossils. At least 21 described genera of mammals and two previously undescribed nonmammalian species (including the most complete fossil giant tortoise of its kind ever found) have been reported from the area. The 111 Ranch area is one of few known Class I fossil sites in southeastern Arizona representing late Tertiary deposits. Of considerable scientific interest, the fossils represent one of the better early Pliocene assemblages of the Southwest that are overlain by middle Pliocene deposits. The Blancan vertebrate fauna evidenced in the depositional sequence is an extremely valuable climatological and chronological indicator for the scientific community. This area was identified as a potential ACEC as a result of BLM inventories.

Fossilized diatoms, known as diatomaceous earth, appear as white outcrops in parts of the 111 Ranch. The area also contains many significant vertebrate fossils.

This area meets the relevance criterion because the significant fossil deposits meet the requirements for a natural process or system.

This area meets the importance criterion because it contains more than locally significant fossil deposits.

They have special worth and cause for concern, especially when compared to any similar resource. In addition, they are fragile, sensitive and vulnerable to adverse change, especially from surface disturbing activities.

2. **Relationship to Other Areas of Special Management** - None.

3. **Rationale for Designation** - The 111 Ranch area should be designated as a Research Natural Area ACEC of 2,688 acres because the area meets the relevance and importance criteria, contains scientifically important Class I fossils and needs special management for the protection of these values.

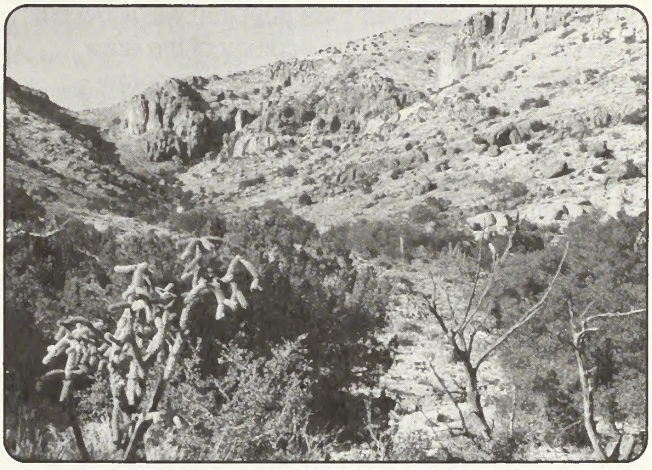
4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- withdraw the area from mineral entry.
- prohibit surface occupancy for mineral leasing activities.
- close the area to mineral material sales.
- designate the area "Limited" to off-highway vehicle use. Limit vehicle use to existing roads and trails.
- require paleontological inventory and mitigation of impacts for all surface disturbing activities, such as livestock facilities and wildlife waters.
- prohibit authorization of rights-of-way.
- prohibit woodcutting and gathering.
- manage the area as a Visual Resource Management Class II area to preserve its scenic and natural values.
- require a paleontological collection permit for all fossil collecting.

5. **Alternatives Considered** - *Alternative B* is the same as the *Preferred Alternative*. In *Alternative C* only 1,728 acres would be designated as an ACEC. The management prescription in *Alternative C* is the same as under the *Preferred Alternative* with the following exceptions: the area is not withdrawn from mineral entry; a mining plan of operations is required for all future mining activity; the area has no mineral leasing constraints; and there are no constraints on mineral materials sales.

Peloncillo Mountains Outstanding Natural Area ACEC

1. **Description of the Value, Resource, System or Hazard** - The Peloncillo Mountains contain a number of special resources. This is a significant area for known and projected archaeological sites. The volcanic formations in this area are the highest and roughest portion of the range. The mountains with their erosional features, narrow canyons with oak forests, steep cliffs and interesting color combinations form an area of high scenic quality. Desert bighorn sheep were recently reintroduced into this area. This area was identified as a potential ACEC as a result of BLM inventories.



Rugged volcanic formations and narrow, oak-lined canyons highlight the scenic beauty of the Peloncillo Mountains north of San Simon.

This area meets the relevance criterion because it has significant and numerous archaeological sites, a significant wildlife resource in the desert bighorn sheep, and a significant visual resource in the highly scenic mountains, canyons and vegetation.

This area meets the importance criterion because it has qualities that are sensitive (bighorn sheep, cultural resources and visual resources), exemplary (geological formations) and vulnerable to adverse change (cultural, geological, visual and wildlife resources).

2. **Relationship to Other Areas of Special Management** - Portions of the proposed ACEC are in the Peloncillo Mountains Wilderness Study Area, an area not recommended for wilderness. This area was proposed as a natural area in a past plan.

3. **Rationale for Designation** - This area should be designated as an Outstanding Natural Area ACEC of 11,399 acres because it has special values that meet the relevance and importance criteria and are in need of special management for the protection and enhancement of these values.

4. **Special Management Prescription** - The management prescription in the *Preferred Alternative* is to:

- require a mining plan of operations for all future mining activity.
- designate the area "Limited" to off-highway vehicle use. Limit vehicle use to existing roads and trails.
- manage the area to accelerate recovery of the oak woodlands to reach good ecological condition.
- prepare a prescribed burn plan that will allow fire to continue its role in the ecology of the area.
- acquire private inholdings, as they become available.
- prohibit woodcutting and gathering for home use. Gathering dead and down wood for campfires is permitted.
- manage the area as a Visual Resource Management Class II area to preserve its scenic and natural qualities.
- prohibit authorization of rights-of-way.

5. **Alternatives Considered** - In *Alternative B*, an ACEC would be established on 13,439 acres of public land. This alternative includes the same lands as in the *Preferred Alternative*, as well as additional lands around Midway Peak and a geological formation west of West Doubtful Canyon. The management prescription is the same as for the *Preferred Alternative*. *Alternative C* is the same as the *Preferred Alternative*, including the management prescription.

Areas Considered But Not Designated

Fishhooks Canyons - This area was nominated in the 1973 Geronimo MFP as an Outstanding Natural Area. In 1986 the area was nominated as an RNA-ACEC by The Nature Conservancy for its botanical resources. On-site evaluation of the resources documented that the area had been subjected to a long period of livestock grazing, and its location within a WSA and adjacent to the San Carlos Indian Reservation would make the special management prescriptions impractical. The Nature Conservancy withdrew their nomination based on the additional information and the Bureau dropped the area from further ACEC consideration. Riparian values will be protected through the District's riparian policy. Scenic values are protected by interim Class II designation pending wilderness decisions as the area is within the Fishhooks WSA. Should Congress not designate the Fishhooks as wilderness, Class III VRM status will be retained to protect visual resources.

Johnny Creek - The area was proposed for study as an ONA in the 1973 Geronimo MFP. Review and study of the resources has determined that the scenic and riparian values did not meet the relevance and importance criteria and the area was dropped from consideration as an ACEC. The riparian values will receive protection through the riparian policy, and scenic resources by Class III VRM designation.

Markham Creek - Riparian, wildlife, fisheries, scenic and cultural values present in the Markham Creek Canyon were the basis for the suggested ACEC nomination. The area was dropped from consideration as the resources did not meet the relevance and importance criteria. The natural and cultural resources will receive protection and management through other decisions in this plan. Portions of the area are within the Day Mine WSA, though it is not recommended for wilderness.

Red Knolls - The Red Knolls geologic formation was evaluated for ACEC status based primarily on concern for human safety. It was dropped from further consideration when it was determined that there was no practical management that would reduce the hazard and nomination would likely attract additional visitors who could not be excluded from the unstable formations.

Salt Creek - The proposal was based upon scenic, cultural and riparian resources. On-site evaluation and consultation with authorities documented that the resources did not meet the relevance and importance criteria and the area was dropped from review. The riparian and cultural values will receive management attention by decisions in this document.

Trujillo Canyon - The area was investigated to determine if riparian or cultural resources required ACEC designation and special management. The resources did not meet the relevance and importance criteria and the area was dropped from further consideration. Portions of the area are within the Gila Box and Turtle Mountain WSAs, though they are not recommended for wilderness.

Turtle Mountain Desert Grassland - The area suggested for ACEC designation contained relevant and important desert grassland resources. However,

the preferred management prescription was not special management. The proposed area was dropped from further consideration due to the lack of special management needs. Other relict grasslands are proposed for ACEC status. The suggested area is totally within the Turtle Mountain WSA.

Mescal Mountain-Needles Eye - This proposal was a combination of five separate areas suggested for review in the Winkelman MFP or nominated by The Nature Conservancy. The Mescal Creek portion was dropped as the wildlife and riparian resources, while relevant and important, did not require special management and will be adequately protected in all alternatives considered in this plan. The entire area is within the Needles Eye WSA, recommended for wilderness designation. There were no special management needs identified for botanical resources on the El Capitan portion other than retention in public ownership. Riparian, wildlife and scenic resources along the Gila River below Coolidge Dam are within the Needles Eye WSA and will receive adequate protection through management common to all alternatives in this plan. The other two areas (Desert Grassland RNA and Dry Spring RNA ACECs) are proposed for designation as ACECs.

Swamp Springs Canyon - This area was identified as a potential ACEC in the 1980 wilderness inventory conducted by BLM. It is part of an ACEC recommended by The Nature Conservancy in 1988. The resources in this area were determined to qualify as an ACEC but better management would be provided if the area was combined with other lands as part of the Swamp Springs-Hot Springs Watershed ACEC proposal. Therefore, Swamp Springs Canyon has been dropped from consideration as an individual parcel except in *Alternative C.* Portions of the proposed area are within the proposed additions to the Galiuro Wilderness.

Sycamore Canyon - This area was recommended for ACEC status for its riparian and scenic values in the BLM 1980 wilderness inventory. On-site review determined that it lacked regional importance on its own merits. However, it was found to be important as part of the Swamp Springs-Hot Springs Watershed ACEC, and inclusion in that boundary would facilitate special management attention to that nominated area. Portions of the Sycamore Canyon area are within the proposed additions to the Galiuro Wilderness.

Government Peak - This area was considered in the San Simon MFP as a Research Natural Area. An on-site evaluation showed that the area had been heavily grazed by cattle, had no unique plant associations and offered little from a botanical standpoint for designation as an RNA. This area was carried forward from past planning and evaluated as an ACEC. Government Peak met the relevance criterion because it has a significant visual resource in the large area of exposed granite boulders and outcrops. This area, however, did not meet any of the categories under the importance criterion. The scenic quality of this area will be protected through a VRM Class III designation. This area is within the Dos Cabezas Mountains Wilderness Study Area (WSA) and within the portion recommended for wilderness designation.

Happy Camp, Howell and Tar Box Canyons - Howell Canyon was considered in the San Simon MFP as a Research Natural Area. An on-site evaluation showed that portions of the area had received heavy cattle grazing and that the overall area offered little in the way of unique or typical plant communities for designation as an RNA. This area was carried forward from past planning and evaluated as an ACEC. Happy Camp, Howell and Tar Box Canyons did not meet either the relevance or importance criteria. The riparian values in these canyons will receive protection through the riparian policy. This area is within the Dos Cabezas Mountains WSA and within the portion recommended for wilderness designation.

Appendix 3

Wilderness Inventory Reports

Aravaipa Canyon Wilderness Additions 205
Galiuro Wilderness Additions 209

Aravaipa Canyon Wilderness Additions

1. Size

Three wilderness inventory units lie adjacent to the existing Aravaipa Canyon Wilderness (ACW). The smallest inventory unit (1,195 acres) is north and northwest of ACW and is bounded by private land, roads and the wilderness. The inventory unit northeast of ACW contains 8,810 acres and is bounded by roads, the San Carlos Apache Indian Reservation, private land and ACW. The largest inventory unit (9,565 acres) is south of ACW and is bounded by roads, private land and the wilderness. Table 1 summarizes the acreage of each unit.

Table 1
Wilderness Inventory Unit Acreages (Approximate)

	Unit 1	Unit 2	Unit 3
Public Land	1,195 ac.	8,810 ac.	9,565 ac.
Private Land	0 ac.	80 ac.	640 ac.
Total	1,195 ac.	8,890 ac.	10,205 ac.

Each wilderness inventory unit meets the size requirements of the Wilderness Act of 1964 by having "...at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition." The smallest inventory unit, though less than 5,000 acres, satisfies the size requirement by virtue of being contiguous to ACW. The three wilderness inventory units will be addressed in this report as one wilderness inventory area adjacent to ACW.

The combined wilderness inventory area contains about 19,570 acres of public land north and south of Aravaipa Canyon Wilderness. Private land within the wilderness inventory area totals 720 acres. The existing wilderness itself is 6,699 acres of public land.

2. Naturalness

The imprint of man's work is substantially unnoticeable throughout the wilderness inventory area. Many of the developments that are present in the area are range improvements and roads and ways that are associated with livestock grazing. The roads and ways also receive a considerable amount of recreation use during hunting seasons. Following is a summary of the imprints of man's work found in the inventory area:

- 11.8 miles of roads
- 9.4 miles of ways
- 29 dirt tanks
- 5 cement dams
- 2 developed springs
- 4 corrals
- 21.4 miles of fences
- 1.6 miles of pipelines
- Painted Cave line camp consisting of house, corral, developed spring and 0.2 mile access road
- RAWS station (weather monitoring)

A listing of imprints of man's work by township, range and section is found in Table 2 at the end of this report.

Much of the road and way mileage is low grade, requiring four-wheel drive, high clearance vehicles for passage. There are few cuts and fills along the roads, the roads and ways are generally narrow with some vegetation growing in the center and the visibility of these roads and ways is not prominent.

The following eight roads have been identified as entering into and ending within the wilderness inventory area:

- Painted Cave (SE1/4NE1/4 Sec.12, T.6S., R.17E.) 0.2 mi.
- Twin Tanks (Secs.3,9,10, T.6S., R.18E.) 2.9 mi.
- Cement Tank (NW1/4NE1/4 Sec.3, T.6S., R.18E.) 0.2 mi.
- Sheep Pasture (NE1/4SW1/4 Sec.3, T.6S., R.18E.) 0.4 mi.
- Pat's Tank (Secs.8,9,18, T.6S., R.19E.) 2.5 mi.
- Pilares Tank (Secs.8,9,17, T.6S., R.19E.) 1.0 mi.
- Bill's Corral (Secs.23,26,35, T.6S., R.18E.) 3.2 mi.
- Stone Cabin (Secs.27,33,34, T.6S., R.18E.) 1.4 mi.

Many of the dirt tanks and cement dams are not generally seen as their location in canyons and drainage bottoms tends to restrict the amount of area from which they can be noticed. The surface area of the water impounded varies from as little as about 30 feet in diameter to an acre for the larger tanks. Nearly all of them were constructed years ago and have well established vegetation on the earthen dams and near the margins surrounding the waterline. This significantly reduces the man-made appearance of the dams. The spring developments are small and unobtrusive.

Though fences are found throughout the inventory area, the nature of their construction - low profile, separate strands of wire, fencelines that are not cleared and bladed - makes them largely unnoticeable. The corrals are widely scattered in the inventory area and are made of mostly natural-appearing materials further minimizing the effect of their presence on the landscape.

Two pipelines run along the ground just inside the boundary roads, one on the west and the other on the east side of the inventory area. They are both surface laid and approximately two inch diameter lines that are often obscured by low growing vegetation.

The Painted Cave line camp sits in the bottom of a narrow, steep walled canyon that limits the area from which the camp can be seen. The developments there affect only the naturalness of the immediate area to which they are confined.

The Remote Automated Weather Station (RAWS) is on a gently sloping flat and rises slightly higher than the surrounding vegetation. The aspect of the slope generally makes the station less visible from nearby viewpoints than from a distance. At a distance the station is only visible when sunlight is being reflected at low angles. The RAWS station is substantially unnoticeable in the wilderness inventory area.

A 230 acre area within the inventory area contains several developments that, taken together, affect the naturalness of the NW1/4 Sec. 2 and the NE1/4 Sec. 3, T. 6 S., R. 18 E. That area contains two dirt tanks, a large corral, one mile of road and about 2.6 miles of fence. The facilities serve as the hub of an intensive livestock grazing operation.

Naturalness is also affected by several developments on about 2,100 acres in the Dry Camp/Pilares area on the east side of the inventory area. That area contains 3.5 miles of roads, 3.5 miles of fences, 0.2 mile of pipeline and four dirt tanks. These developments are also used primarily for livestock grazing operations.

With the exception of the two affected parcels just discussed and the above listed roads which enter into and end within the inventory area, the remainder of the wilderness inventory area totalling 17,240 acres of public land appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable.

3. Outstanding Opportunity for Solitude

An outstanding opportunity for solitude is available throughout the natural portion of the wilderness inventory area. The upper ends of all the side canyons of Aravaipa Canyon are contained within the inventory area. These canyons are often deep, twisting and heavily vegetated providing a superior level of screening and possibilities for isolating individuals and groups from one another. The upper side canyons are also less frequently visited than Aravaipa Canyon. The rugged nature and lack of trails in the side canyons tend to limit use to more motivated or experienced individuals. Most of the side canyons are not easily accessible from the uplands surrounding them.

The uplands of the wilderness inventory area also offer an outstanding opportunity for solitude. These areas between the canyons are varied in topography consisting of rolling hills, bluffs and buttes, steep-sloped ridges and relatively flat areas dissected by rocky draws. Though more open in character than the canyons, the uplands provide ample possibilities to find seclusion and isolation from others. Portions of the uplands are more heavily vegetated with pinyon, juniper and oaks, further lending to screening and separating persons from one another. Visitation to the uplands is also light and is mostly seasonal.

Overall, the size, topography and vegetation of the canyons and the uplands contributes to an outstanding opportunity for solitude in the wilderness inventory area.

4. Outstanding Opportunity for Primitive and Unconfined Recreation

The natural portion of the wilderness inventory area offers outstanding opportunities for such primitive and unconfined types of recreation as hiking, horseback riding, backpacking, camping, hunting, sightseeing, photography and wildlife observation. Opportunities for these activities are undeveloped and dispersed throughout the inventory area. Some of these activities are an extension of the outstanding recreational opportunities found in Aravaipa Canyon Wilderness as well as standing on their own merits within the wilderness inventory area.

The Aravaipa area is becoming world renowned for its trophy desert bighorn sheep hunting. These highly valued, though limited, opportunities are available in the inventory area.

The area's remoteness and naturalness enhance the outstanding opportunities for primitive and unconfined recreation found in the wilderness inventory area. These opportunities are considered outstanding both in the diversity of activities available and the quality of each opportunity.

5. Supplemental Values

The wilderness inventory area contains several ecological, geological or other features of scientific, educational, scenic or historical value. Some of the side canyons have perennial water extremely important to wildlife in a desert environment. They also provide habitat to native fish. The riparian

environments supported by this water are also critical to wildlife. Much of the upland is ideal habitat for desert bighorn sheep. The herd, reestablished in the 1950s and early 1970s, has prospered and provides a substantial attraction for visitors to the area. The values present in the wilderness inventory area provide excellent opportunities for educational experiences and scientific study of desert wildlife and ecological interactions.

The scenic values of the portions of Hell Hole, Parsons Canyon, Virgus Canyon, Hells Half Acre, Painted Cave Canyon, Horse Camp Canyon and Booger Canyon in the inventory area are outstanding. The geology of the deep canyons and clifflines is varied in color and composition, offering many scenic vistas. The lush green of the riparian growth in the canyon bottoms also makes a striking and scenic contrast to the drier desert vegetation of the canyon slopes and uplands.

Prehistoric and historic archaeological sites are found throughout the inventory area and could provide significant information concerning the former inhabitants of the Aravaipa area. Though archaeological sites are known to exist there, only a small portion of the area has been inventoried and recorded. Some historic sites are present in the area, remnants of homesteading efforts. A grave, dating back to the early 1900's, at the north end of Horse Camp Canyon just inside the inventory area attests to the difficulty and hazards of life in this remote place.

6. Possibility of Returning Portions of the Area to a Natural Condition

Nine ways within the inventory area could be taken out of use and allowed to return to a natural condition. Following is a list of these ways and their lengths:

- W of Javelina, NE1/4 Sec.7, T.6S., R.18E. 0.4 mi.
- E of Horse Camp, SE1/4 Sec.9, T.6S., R.18E. 0.5 mi.
- E of Booger, Sec.11, T.6S., R.18E. 0.7 mi.
- W of Sand Tanks, NW1/4SE1/4 Sec.11, T.6S., R.18E. 0.1 mi.
- W of Turkey Creek, Sec.31, T.6S., R.19E. 0.9 mi.
- NW of Wire Corral, Sec.1, T.7S., R.18E. 0.9 mi.
- E of White Tank, Secs.26,35, T.6S., R.18E. 1.6 mi.
- W of Bill's Corral, Sec.23, T.6S., R.18E. 0.3 mi.
- NW of Stone Cabin (two forks), Secs.21,27,28, T.6S., R.18E. 3.6 mi.

These ways total 9.0 miles and could return to a substantially unnoticeable condition by natural processes. Some of the ways or portions of the ways are already substantially unnoticeable or are passable only by all-terrain vehicle or motorcycle.

Conclusion

The Aravaipa Canyon Wilderness Additions wilderness inventory area meets the size requirements. A 17,240 acre public land portion of the area appears to be natural with the imprint of man's work substantially unnoticeable. About 720 acres of private land in two parcels are also in the area. There are no State land inholdings. The area offers outstanding opportunities for solitude and primitive and unconfined types of recreation and also has supplemental values.

The 17,240 acre public land area will be studied in the Safford District Resource Management Plan, pursuant to Section 202 of FLPMA, to determine suitability for designation as wilderness as an addition to Aravaipa Canyon Wilderness.

Table 2
Naturalness - Imprints Of Man's Work

T. 5 S., R. 18 E.,	Sec. 23	SW1/4SW1/4,	Jackson Tank
	Sec. 27		fence (1.3 mi.)
		NE1/4SE1/4,	Haught Tank
	Sec. 28		fence (0.25 mi.)
	Sec. 33		fence (1.2 mi.)
	Sec. 34		fence (3.2 mi.)
T. 6 S., R. 17 E.,	Sec. 1	SW1/4,	pipeline (0.1 mi.)
	Sec. 2	SE1/4,	pipeline (0.2 mi.)
	Sec. 11		pipeline (0.5 mi.)
	Sec. 12		pipeline (0.6 mi.)
		SE1/4NE1/4,	Painted Cave Camp (house, corral, access road - 0.2 mi., developed spring)
		SW1/4SW1/4,	fence (0.25 mi.) cement tank
T. 6 S., R. 18 E.,	Sec. 3		fence (3.5 mi.) road (1.9 mi.)
		NW1/4NE1/4,	Cement Tank
		NE1/4NE1/4,	Trap Tank corral
		SE1/4SW1/4,	RAWS Station
	Sec. 4		fence (1.2 mi.)
		NW1/4,	way (0.4 mi.)
		NW1/4NW1/4,	Trail Tank
	Sec. 7	N1/2,	fence (0.6 mi.)
		NE1/4,	way (0.4 mi.)
		SE1/4NE1/4,	Javelina Tank
		SE1/4SW1/4,	cement dams (2)
	Sec. 8	NE1/4SE1/4,	Twin Lakes (2)
	Sec. 9	NE1/4,	road (0.4 mi.)
		SE1/4NE1/4,	Twin Tanks (2)
		SE1/4,	way (0.5 mi.)
	Sec. 10		road (1.2 mi.)
		NE1/4,	fence (0.5 mi.)
	Sec. 11		way (0.7 mi.) fence (1.8 mi.)
		NW1/4SE1/4,	way (0.1 mi.)
		SW1/4NW1/4,	cement dam

Table 2 (cont.)
Naturalness - Imprints Of Man's Work

	Sec. 12		fence (0.8 mi.)
		SW1/4SW1/4,	Horse Camp Tank
	Sec. 20	NE1/4NE1/4,	fence (0.1 mi.)
	Sec. 21		ways (l.5 mi.)
		NW1/4NW1/4,	fence (0.2 mi.)
	Sec. 22	SE1/4NE1/4,	Flower Spring
	Sec. 23		road (1.4 mi.)
			way (0.3 mi.)
		NE1/4NW1/4,	Bill's Corral
		SW1/4NW1/4,	Woodrows Tank
		NW1/4NE1/4,	fence (0.1 mi.)
		NE1/4SE1/4,	Red Tank
T. 6 S., R. 18 E.,	Sec. 26		road (1.5 mi.)
T. 6 S., R. 18 E.,	Sec. 26		way (1.2 mi.)
		NE1/4NW1/4,	Playa Tank
		NE1/4SE1/4,	Basin Tank
		NE1/4SW1/4,	Houston Tank
	Sec. 27	SE1/4NE1/4,	Bill's Tank
		SE1/4,	fence (0.3 mi.)
		SW1/4,	way (0.3 mi.)
			fence (0.2 mi.)
		NW1/4SW1/4,	Lupe's Seep
			Stone Cabin
		SW1/4SW1/4,	Stone Cabin Tank
			road (0.2 mi.)
	Sec. 28		ways (1.8 mi.)
		NW1/4SE1/4,	corral
	Sec. 30	NE1/4,	fence (0.2 mi.)
		NW1/4NE1/4,	Diger Tank
	Sec. 33		road (0.5 mi.)
	Sec. 34		road (0.6 mi.)
	Sec. 35		way (0.4 mi.)
		NW1/4NW1/4,	road (0.3 mi.)
			White Tank
		SW1/4NW1/4,	Batamote Tank
		NW1/4SE1/4,	fence (0.4 mi.)
	Sec. 36	SE1/4SE1/4,	dam
T. 6 S., R. 19 E.,	Sec. 5	NW1/4SW1/4,	pipeline (0.2 mi.)
	Sec. 6		fence (1.2 mi.)
	Sec. 7		fence (0.2 mi.)
	Sec. 8		roads (1.6 mi.)
			fence (0.7 mi.)
		SW1/4SE1/4,	dirt tank
	Sec. 9		fence (1.1 mi.)
			roads (0.4 mi.)
		NW1/4SW1/4,	Jick Tanks
	Sec. 17		roads (0.8 mi.)
			fence (0.8 mi.)
		NE1/4SW1/4,	Pilares Tank
	Sec. 18		fence (0.1 mi.)
			road (0.7 mi.)
		SW1/4NW1/4,	Pats Tank
	Sec. 31		fence (0.2 mi.)
			way (0.9 mi.)
		NW1/4SW1/4,	Mescal Tank
	Sec. 32	SW1/4NW1/4,	fence (0.1 mi.)
T. 7 S., R. 18 E.,	Sec. 1		way (0.9 mi.)
		SE1/4SE1/4,	Wire Corral
		NE1/4SW1/4,	Moore Tank
	Sec. 4	NE1/4NE1/4,	road (0.1 mi.)
	Sec. 11		fence (0.8 mi.)
		SE1/4NW1/4,	Brown Tank
	Sec. 12	SW1/4NW1/4,	Ralph's Tank
	Sec. 14	SW1/4NE1/4,	fence (0.1 mi.)

Footnote:The named tanks are generally dirt tanks (a reservoir behind an earthen dam).

Galiuro Wilderness Additions

1. Size

Three wilderness inventory units containing 20,880 acres of public land are within the Muleshoe Cooperative Management Area (CMA). The Bass Canyon unit is 5,520 acres and is bounded by the Coronado National Forest, State land, private land and the Jackson Cabin Road. The Swamp Springs Canyon unit contains 9,460 acres and is bounded by private land, State land, the Coronado National Forest, roads and a natural gas and oil pipeline corridor. The Hot Springs Canyon unit is 5,900 acres of public land and is bounded by roads, the pipeline corridor, private land and State land. An 80 acre parcel of private land is within the Hot Springs Canyon unit. Table 1 summarizes the acreage of each unit.

Table 1
Wilderness Inventory Unit Acreages (Approximate)

	Bass Canyon	Swamp Springs Canyon	Hot Springs Canyon
Public Land	5,520 ac.	9,460 ac.	5,900 ac.
Private Land	0 ac.	0 ac.	80 ac.
Total	5,520 ac.	9,460 ac.	5,980 ac.

Each wilderness inventory unit meets the size requirements of the Wilderness Act of 1964 by having "...at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition." In addition to meeting the size requirement on its own merit, the Bass Canyon unit is adjacent to the Galiuro Wilderness and 640 acres of public land recommended for wilderness designation under the provisions of Section 603 of FLPMA. All three inventory units will be addressed in this Wilderness Inventory Report.

2. Naturalness

The imprint of man's work is substantially unnoticeable throughout each of the wilderness inventory units. Developments are widely scattered in the areas and are small scale, mostly unobtrusive range improvements such as fences, small dirt tanks, dams and windmills. The roads and ways receive some recreation use for sightseeing and hunting. Following is a summary of the imprints of man's work found in the inventory units:

- 0.6 mile of roads
- 0.5 mile of ways
- 2 dirt tanks
- 2 cement dams
- 1 corral
- 5.1 miles of fences
- 2 windmills
- 1 well
- 1 mining area (prospects)

A listing of imprints of man's work by township, range and section is found in Table 2 at the end of this report.

Two segments of road have been identified, both entering into the southwest part of the Swamp Springs Canyon unit. The road in Sec. 22, T. 12 S., R. 20 E. is 0.5 mile in length and leads to mining prospects. The other road is in the NW1/4SE1/4 Sec. 22, T. 12 S., R. 20 E., and is 0.1 mile long ending at a dirt tank.

Two ways are in the Hot Springs Canyon unit. One ends at a windmill in the southern portion of the unit and the other ends on a ridge above private property in Hot Springs Canyon. The ways are low grade and passable only by four-wheel drive vehicles. They do not create a significantly unnatural imprint on the landscape.

Fences in each of the three wilderness inventory units are widely scattered and have little impact on the area's naturalness. The low profile and lack of bladed fencelines contribute to the substantially unnoticeable character of these developments.

The remainder of the imprints of man's work - dirt tanks, cement dams, windmills, corral, well and mine shaft - found in the inventory units are rather small in character. The field of view that each could be seen from is greatly restricted by topography. They are also dispersed throughout the area and do not cause a significantly noticeable effect on the naturalness of the area.

None of the imprints of man's work are so grouped as to have a cumulative effect on the area's naturalness. Only those roads identified above affect the naturalness of the Swamp Springs Canyon wilderness inventory unit. Those roads are excluded as cherrystems from the area considered as natural.

3. Outstanding Opportunity for Solitude

Bass Canyon Unit - Outstanding opportunities for solitude exist in the unit. Bass Canyon, West Fork Bass Canyon and Hackberry Canyon in the southern portion of the unit provide excellent opportunities for individuals to find seclusion. Riparian vegetation in

these canyons tends to screen people from one another and further contributes to the outstanding opportunities for solitude. In the northern portion of the unit, the escarpment of the Galiuro Mountains separates and effectively isolates the west from the east half of that area. Several side canyons drain to the east dissecting the terrain.

Upland vegetation of pinyon and juniper also breaks up the view and lends to the feeling of being able to be alone in this inventory unit.

Swamp Springs Canyon Unit - The natural portion of the unit has outstanding opportunities for solitude. Parts of Sycamore, Redfield, Swamp Springs and Cherry Spring Canyons, as well as their side canyons, are found in the northern portion. The twisting nature of these canyons and the dense vegetation in most of the bottoms creates numerous sites for seclusion. Intervening ridges further dissect the terrain and restrict the view potential visitors could have of one another. Wildcat Canyon cuts across the southern part of the unit. These canyons and their varied nature combine with the vegetation and rugged upland topography to create an outstanding opportunity for solitude in the unit.

Hot Springs Canyon Unit - An outstanding opportunity for solitude is not present in the inventory unit. Hot Springs Canyon and a portion of Soza Mesa are the main features of the area. Though the canyon is a major drainage in the area, its wider, more open character allows for greater chances of contact and sight by individuals and groups not associated with one another. Soza Mesa is a large flat offering little seclusion or limitation of view. Taken together with the terrain in the remainder of the unit, the opportunities for solitude are not prominent and fewer opportunities for solitude are present than necessary for those opportunities to be considered collectively outstanding.

4. Outstanding Opportunity for Primitive and Unconfined Recreation

Bass Canyon Unit - Outstanding opportunities for hiking, backpacking, horseback riding, camping, hunting, sightseeing and photography are available in the inventory unit. These activities can be enjoyed throughout the area. The cliffline in the northern portion of the unit is a particularly striking feature as a subject for photography and sightseeing. The undeveloped nature of the canyons allows for an outstanding primitive and dispersed opportunity to hike and camp. The opportunities in the inventory unit are considered outstanding both in quality and diversity of available activities.

Swamp Springs Canyon Unit - Hiking, horseback riding, backpacking, camping, sightseeing, photography and wildlife observation are some of the outstanding primitive recreation opportunities present in the unit. The many canyons and tributaries in the north provide a particularly suitable situation for personal exploration and challenging primitive recreation activities. These opportunities are dispersed throughout that area. The opportunities in the inventory unit are considered outstanding both in quality and diversity of available activities.

Hot Springs Canyon Unit - Outstanding primitive and unconfined recreation opportunities are not present in the unit. Though hiking, camping, horseback riding and birdwatching are some of the activities that could be pursued in the area, none are considered to be excellent or prominent or to offer a challenge that sets them apart from recreational opportunities anywhere else in southeast Arizona. Most activities in the unit are largely confined to Hot Springs Canyon alone resulting in a lack of diversified conditions. Opportunities for primitive and unconfined types of recreation are not considered outstanding in quality or diversity in this inventory unit.

5. Supplemental Values

The three wilderness inventory units taken together contain several ecological, geological or other features of scientific, educational, scenic or historical value. Many of the canyons support a riparian environment that is increasingly valuable to wildlife in the rapidly developing desert Southwest. Desert bighorn sheep and rare native fish are among the wildlife found in the inventory units. The massive escarpment in the Bass Canyon unit is an impressive example of the fault block development of the Galiuro range and Basin and Range mountains in general. The striking cliffline and the deep canyons of the Swamp Springs Canyon unit are scenic features not common in the region. Abandoned homesteads and cabins in the units are remnants of historical attempts to occupy and use the land. Archaeological resources are also present in the area.

6. Possibility of Returning Portions of the Area to a Natural Condition

All three wilderness inventory units are natural and have little in the way of areas to return to a natural condition. The range improvements described above have an inconsequential effect on the naturalness of the units and are still considered usable and needed. One way in the Hot Springs Canyon unit formerly provided vehicle access to private land and may be reopened for that purpose. The other way in the unit leads to a functioning windmill. Allowing any or all of

the localities where the imprints of man's work are found in the inventory units to return to a natural condition would do little to improve the natural appearance of the area.

Conclusion

Bass Canyon, Swamp Springs Canyon and Hot Springs Canyon inventory units meet the size requirement. A 20,880 acre public land area composed of the three wilderness inventory units appears to be natural with the imprint of man's work substantially unnoticeable.

A 14,980-acre public land area composed of the Bass Canyon and Swamp Springs Canyon units offers outstanding opportunities for solitude and primitive and unconfined types of recreation. The 5,900 acre public land Hot Springs Canyon unit does not offer outstanding opportunities for solitude or primitive and unconfined types of recreation. All three inventory units have supplemental values.

A 14,980-acre public land area composed of the Bass Canyon and Swamp Springs Canyon units will be studied in the Safford District Resource Management Plan, pursuant to Section 202 of FLPMA, to determine suitability for designation as wilderness as an addition to the Galiuro Wilderness.

Table 2
Naturalness - Imprints Of Man's Work

Bass Canyon Unit			
T. 11 S., R. 20 E.,	Sec. 35	NE1/4SE1/4,	windmill
T. 12 S., R. 21 E.,	Sec. 6	NW1/4,	fence (0.6 mi.)
	Sec. 7	NW1/4SW1/4,	dirt tank
	Sec. 17		fence, 3 segments (0.8 mi.)
	Sec. 18	SW1/4,	fence (0.5 mi.)
Swamp Springs Canyon Unit			
T. 11 S., R. 20 E.,	Sec. 22	SE1/4SE1/4,	well
T. 12 S., R. 20 E.,	Sec. 4	SW1/4SW1/4,	fence (0.2 mi.)
	Sec. 15		fence (0.9 mi.)
		SW1/4NE1/4	Stone Cabin Dam
	Sec. 22		road (0.5 mi.)
		SW1/4NE1/4,	mine shaft
			dam
		NW1/4SE1/4,	road (0.1 mi.)
		dirt tank	
	Sec. 24	SW1/4SW1/4	fence (0.2 mi.)
	Sec. 25	SW1/4SE1/4,	fence (0.2 mi.)
Hot Springs Canyon Unit			
T. 12 S., R. 20 E.,	Sec. 25	SE1/4SW1/4,	fence (0.2 mi.)
	Sec. 26	SW1/4NE1/4,	way (0.3 mi.)
	Sec. 36	SW1/4NE1/4,	corral
		SE1/4SE1/4,	fence (0.2 mi.)
T. 12 S., R. 21 E.,	Sec. 31	SW1/4SW1/4,	fence (0.2 mi.)
T. 13 S., R. 20 E.,	Sec. 2		fence (1.1 mi.)
		SE1/4NE1/4,	way (0.2 mi.)
			windmill

Appendix 4

Wilderness Suitability Reports

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Aravaipa Canyon Wilderness Additions

Introduction

Aravaipa Canyon Wilderness was included in the National Wilderness Preservation System (NWPS) on August 28, 1984. The area contains 6,699 acres of public land surrounding an eleven mile stretch of perennially flowing Aravaipa Creek. Nine major side canyons of varying length enter Aravaipa Creek along its course through the wilderness. The upper portions of those side canyons were on State land at the time of wilderness designation and thus were not included in Aravaipa Canyon Wilderness (ACW).

In a land exchange completed in April 1986 with the State of Arizona, BLM acquired approximately 51,000 acres north and south of the wilderness. Following that exchange and at the beginning of the Safford District Resource Management Plan (RMP) preparation, the issue of considering additions to ACW was raised by conservation groups and the public. That issue is being addressed through this report and the RMP, under the provisions of Section 202 of FLPMA.

The Aravaipa Canyon Wilderness Additions Wilderness Inventory Report identified about 17,240 acres of public land having wilderness characteristics as defined by the Wilderness Act of 1964 (P.L. 88-577). This report evaluates the wilderness values of the area, the ability to manage it as wilderness, other resource values present in the area and the effects wilderness designation would have on other resources.

Evaluation of Wilderness Values

1. Mandatory Wilderness Characteristics

Size - The study area contains 17,240 acres of public land. Two private land inholdings totaling 720 acres are within the study area. An 80 acre parcel is located in Paisano Canyon, north of Aravaipa Canyon in the eastern part of the study area. A 640 acre parcel is in the southwest part of the study area, south of Aravaipa Canyon and the mouth of Virgus Canyon. These private lands are shown on the report map. The study area meets the size requirement.

Naturalness - The imprint of man's work is substantially unnoticeable in the study area. Developments that are present in the area are mainly range improvements and ways that are associated with livestock grazing. The ways also receive some recreation use during hunting seasons. Following is a summary of the imprints of man's work found in the study area:

- 9.4 miles of ways
- 15 dirt tanks
- 5 cement dams
- 2 developed springs
- 1 corral
- 15.3 miles of fences
- RAWS station (weather monitoring)

Legal descriptions of imprints are listed in Table 2 of the *Aravaipa Canyon Wilderness Additions Wilderness Inventory Report.*

Much of the way mileage is low grade, requiring four-wheel drive, high clearance vehicles for passage. The ways are narrow with some vegetation growing in the center and their visibility is not prominent.

Many of the dirt tanks and cement dams are not generally seen as their location in canyons and drainage bottoms tends to restrict the amount of area from which they can be noticed. The surface area of the water impounded varies from as little as about 30 feet in diameter to an acre for the larger tanks. Nearly all of them were constructed years ago and have vegetation well established on the earthen dams and near the margins surrounding the waterline. This significantly reduces the man- made appearance of the dams. The spring developments are small and unobtrusive.

The nature of the fences found throughout the study area - low profile, separate strands of wire, fencelines that are not cleared and bladed - makes them largely unnoticeable. The corral is made of mostly natural appearing materials minimizing the effect of its presence on the landscape.

The Remote Automated Weather Station (RAWS) is on a gently sloping flat and rises slightly higher than the surrounding vegetation. The aspect of the slope generally makes the station less visible from nearby viewpoints than from a distance. At a distance the station is only vis ible when sunlight is being reflected at low angles. The RAWS station is substantially unnoticeable in the study area.

The 17,240 acres of public land in the study area appear to have been affected primarily by the forces

of nature with the imprint of man's work substantially unnoticeable.

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation - An outstanding opportunity for solitude is available through out the study area. The upper ends of all the side canyons of Aravaipa Canyon are contained within the study area. These canyons are often deep, twisting and heavily vegetated, providing a superior level of screening and possibilities for isolating individuals and groups from one another. The upper side canyons are also less frequently visited than Aravaipa Canyon. The rugged nature and lack of trails in the side canyons tend to limit use to more motivated or experienced individuals. Most of the side canyons are not easily accessible from the uplands surrounding them.

The uplands of the study area also offer an outstanding opportunity for solitude. These areas between the canyons are varied in topography consisting of rolling hills, bluffs and buttes, steep-sloped ridges and relatively flat areas dissected by rocky draws. Though more open in character than the canyons, the uplands provide ample possibilities to find seclusion and isolation from others. Portions of the uplands are more heavily vegetated with pinyon, juniper and oaks which further lends to screening and separating persons from one another. Visitation to the uplands is slight and mostly seasonal.

Overall, the size, topography and vegetation of the canyons and the uplands contributes to an outstanding opportunity for solitude in the study area.

The study area offers outstanding opportunities for such primitive and unconfined types of recreation as hiking, horseback riding, backpacking, camping, hunting, sightseeing, photography and wildlife observation. Opportunities for these activities are undeveloped and dispersed throughout the area. Some of these activities are an extension of the outstanding recreational opportunities found in Aravaipa Canyon Wilderness as well as standing on their own merits within the study area.

The Aravaipa area is becoming world renowned for its trophy desert bighorn sheep hunting. Such opportunities are limited and highly valued.

The area's remoteness and naturalness enhance the outstanding opportunities for primitive and unconfined recreation found in the study area. These opportunities are considered outstanding both in the diversity of activities available and the quality of each opportunity.

2. Special Features

The study area contains several ecologic, geologic or other features of scientific, educational, scenic or historic value. Some of the side canyons have perennial water extremely important to wildlife in a desert environment. They also provide habitat to native fish. The riparian environments supported by this water are also critical to wildlife. Much of the upland is ideal habitat for desert bighorn sheep. The herd reestablished in the 1950's and early 1970's has prospered, providing a substantial attraction for visitors to the area. These features provide excellent opportunities for educational experiences and scientific study of desert wildlife and ecological interactions.

The scenic values of the portions of Hell Hole, Parsons Canyon, Virgus Canyon, Hells Half Acre, Painted Cave Canyon, Horse Camp Canyon and Booger Canyon in the study area are outstanding. The geology of the deep canyons and clifflines is varied in color and composition offering many scenic vistas. The lush green of the riparian growth in the canyon bottoms also makes a striking and scenic contrast to the drier desert vegetation of the canyon slopes and uplands.

Prehistoric and historic archaeological sites are found throughout the study area and could provide significant information concerning the former inhabitants of the Aravaipa area. Though archaeological sites are known to exist there, only a small portion of the area has been inventoried and recorded. Some historic sites are present in the area, remnants of homesteading efforts. A grave at the north end of Horse Camp Canyon just inside the study area attests to the difficulty and hazards of life in this remote place.

3. Multiple Resource Benefits

The lands contained in the study area have multiple resource benefits that led to their acquisition in 1986. Interim guidelines for management of the Aravaipa lands were developed following the acquisition.

Watershed management opportunities included blocking up the lower Aravaipa watershed to protect the quantity and quality of water in the creek, managing eight major side canyons with riparian vegetation and stabilizing soil and small side washes through better rangeland management. Wildlife benefits included obtaining and enhancing habitat for threatened and endangered species, big game and other species of high interest to the public. Range management identified opportunities to improve

heavily grazed areas and compare different grazing systems being used in the area. Recreation benefits included enhancing management of existing recreation to minimize impacts on other resources while improving experiences and access for such activities as hunting, camping, hiking and backpacking. Cultural resource opportunities were to manage significant archaeological sites, conduct scientific research on well preserved sites and the little studied Apache culture and to protect areas of value to Native Americans.

The relative permanency of a wilderness designation would extend protection and provide multiple resource benefits to resources in the study area not specifically addressed in the interim guidelines. Wilderness designation would preserve and protect natural ecosystem and plant communities, soils and watershed throughout the area. The closure of the area to OHVs, mineral leasing and mining, subject to valid existing rights, could reduce disturbance of wildlife and cultural resources more than would be possible otherwise.

4. Diversity in the National Wilderness Preservation System (NWPS)

The Aravaipa Canyon Wilderness Additions study area is located in the Mexican Highlands Shrub Steppe/Oak-juniper woodland and Mexican Highlands Shrub Steppe/Grama-tobosa shrubsteppe ecosystems as defined by Bailey (1976) and Kuchler (1966).

The Oak-juniper woodland ecosystem is currently represented in the NWPS by seven wildernesses in Arizona. Six of the wildernesses in this ecosystem are administered by the U.S. Forest Service (USFS) and one by the National Park Service (NPS). The Grama-tobosa shrubsteppe ecosystem is currently represented in the NWPS by only one wilderness, Aravaipa Canyon Wilderness, administered by BLM. The Oak-juniper woodland ecosystem has ten areas under study for wilderness designation administered by BLM and USFS in Arizona and New Mexico. The Grama-tobosa shrubsteppe ecosystem has 17 areas under study administered by BLM and USFS in Arizona and New Mexico.

Though not many existing wildernesses are present in these two ecosystems, a number of potential additions to the NWPS could represent the ecosystems. The study area is one of several opportunities to expand the diversity of natural systems and features in the NWPS.

The study area is within a day's drive (250 miles) of two major metropolitan centers, Tucson and Phoenix, Arizona. Outstanding opportunities for solitude and primitive, unconfined recreation are available within a day's drive of Tucson in:

- 43 designated wildernesses in Arizona and New Mexico administered by USFS, NPS and BLM, and
- 85 areas under wilderness study by USFS, BLM and Fish and Wildlife Service (FWS).

These opportunities are within a day's drive of Phoenix in:

- 51 designated wildernesses in Arizona, New Mexico and California administered by USFS, NPS and BLM,
- 4 areas administratively endorsed for wilderness in Arizona and California administered by FWS and
- 124 areas under wilderness study in Arizona, New Mexico and California administered by USFS, NPS and BLM.

Considering the number of existing, endorsed and study areas already present, wilderness designation of the study area would not appreciably add to the opportunities already available in the NWPS for solitude or primitive recreation within a day's driving time of the two cities.

The geographic distribution of existing, endorsed and potential wilderness areas in Arizona and New Mexico is evenly spread throughout Arizona except for the Navajo Indian Reservation in the northeast part of the State and is distributed evenly north to south in New Mexico but concentrated in the central to western part of the State. Arizona has 45 existing wilderness areas administered by the USFS, NPS and BLM, and 56 areas, most managed by BLM, under study for wilderness designation. New Mexico has 22 existing wildernesses administered by the USFS, BLM and FWS, and 53 areas, most administered by BLM, under study for wilderness designation.

The Aravaipa Canyon Wilderness Additions study area would not add significantly to the geographic distribution of the NWPS.

Manageability

The study area is a manageable unit that could preserve the wilderness character of the land in the long term. Both surface and subsurface in the study area are administered by the BLM.

Access to this remote, rugged area is by foot or four-wheel drive vehicle on the boundary roads. There are no mining claims, oil and gas leases, or geothermal leases or applications pending in the study area. Although the study area is under grazing lease, it appears that would not conflict with preservation of the area as wilderness in the long term.

Impacts on Other Resources

1. Energy and Minerals

Under the Wilderness Act, the lands designated as wilderness are withdrawn from all forms of appropriation under the mining laws and are withdrawn from leasing under the mineral leasing laws, subject to valid existing rights. Generally, some prospecting and exploration work could take place under the mining laws, but no new claims could be filed. No new mineral leasing would be allowed. This provision has the potential to impact the removal of energy and mineral resources not covered under valid existing rights as of the date of designation.

The Bureau of Mines conducted a mineral investigation of about 75,000 acres of the Aravaipa area in 1988. The resulting report, *Mineral Resources of the Aravaipa Study Area, Graham and Pinal Counties, Arizona*, concluded that approximately 85 percent of the study area is covered by thick accumulations of volcanic rocks that are devoid of near-surface mineral occurrences. Erosion in the vicinity of the Table Mountain Mine has exposed irregularly distributed gold and other metal concentrations. Geologic conditions suggest that similar mineral resources may exist beneath the Galiuro Volcanics in a 3,000 acre area surrounding the mine. This area is outside of the Aravaipa Canyon Wilderness Additions study area. No anomalously high concentrations of any element were found in the stream-sediment samples pointing to unknown areas of mineralization.

Sand and gravel resources are present in the drainages throughout the study area but are far removed from markets, making the resources commercially unattractive.

The entire study area has geologic characteristics unfavorable for the formation and accumulation of petroleum and natural gas. No geothermal resources are known to be present in the study area.

Designation of the Aravaipa Canyon Wilderness Additions study area as wilderness would have little impact on energy and minerals. This is due to the area's low potential for mineral, oil and gas and geothermal resources.

2. Livestock and Range Management

Portions of four allotments exist within the study area. All are classified Intensive for range management purposes. The following table summarizes the grazing preference of each allotment, portions of which are outside the study area.

Animal Unit	Cattle Year Months (AUM)	Long (CYL)
Painted Cave	1,560	130
	786 (6 months)	131 (6 months)
Dry Camp	2,796	233
Hell Hole	168	14
South Rim	5,796	483

Several range management facilities exist within the study area. These are described in the Naturalness section of this report.

Livestock grazing is permitted in designated wilderness areas where it was established prior to designation. Associated with livestock grazing are various required facilities. Existing facilities may continue to be maintained. If those facilities are found to be no longer necessary through environmental analysis, they may be phased out and removed. New facilities may be constructed if it is determined they are necessary for the purpose of resource protection (both rangeland and wilderness) and effective management rather than to accommodate increased numbers of livestock.

Methods of construction or maintenance, materials used, necessary equipment and access requirements will be addressed through environmental analysis. The analysis will give consideration to construction or maintenance standards and techniques that will achieve the most practical and reasonable approach considering the wilderness resource. This may also include use of motorized equipment and vehicles.

Intensive management of livestock grazing would occur on the upper Horse Camp Canyon portion of the study area. Wilderness designation of that portion of the study area would restrict some actions needed for intensive livestock grazing management.

Prescribed fire is proposed to restore the productivity of a portion of the range within the study area. Prescribed fires may be allowed in a wilderness when done in accordance with an approved Fire Management Plan and to restore or benefit wilderness values. A discussion of prescribed burning is included in the Fire section of this report.

Impacts upon the rangeland resource will be minimal. Maintenance of existing facilities may continue and new ones may be constructed. However, protection of the wilderness resource is the important consideration that must be evaluated.

3. Wildlife

Wilderness management seeks a natural distribution, number and interaction of indigenous species of wildlife. Natural processes will be allowed to occur in wilderness ecosystems including wildlife populations, as far as possible, without human influences. Management will protect the conditions that allow natural processes a maximum degree of freedom.

To the extent possible, wildlife species in BLM wilderness should be allowed to maintain a natural balance with their habitat and with each other. Wildlife may be harvested under State regulations and direct wildlife control measures will be applied only upon a showing of need.

The basic responsibilities of the BLM and other cooperating State and federal agencies in the management of wildlife are not altered by the Wilderness Act. However, the constraints of the Act and the intent of Congress articulated in the Act and in subsequent legislation will guide the management of wildlife in wilderness. A Wilderness Management Plan and Habitat Management Plans would specify wildlife habitat conditions to be maintained.

A wilderness designation could affect wildlife by attracting more use, including hunting and non-consumptive wildlife viewing. Increased visitation could also put more pressure on riparian areas that provide important wildlife habitat and nesting sites. Animals that are listed as T&E or are proposed for listing may also be sensitive to more people using the area. The degree of these impacts would generally correspond with the number of people visiting the area and, in most cases, is expected to be minor.

The preservation of sensitive, rare, threatened and endangered species dependent on wilderness condition will be favored.

Wilderness designation will have very little impact on management of wildlife in the study area. Based upon current management practices, future management anticipated, laws and policies, very little impact is anticipated.

4. Timber

There is no present use of forest products in the study area. Current planning documents do not authorize harvesting of forest products nor, historically, has there been a demand to do so. No impact would be created by a wilderness designation.

5. Recreation

Wilderness allows a variety of uses including, but not limited to, recreation, scenic, scientific, education, conservation and historic.

The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use. There are places and times within wilderness where unique values may require that recreation and visitor use activities be restricted or entirely prohibited in order to preserve an enduring resource of wilderness. The highest priority among various kinds of visitor use will be accorded those activities which, (1) are most dependent upon the wilderness environment and cannot be reasonably accommodated outside the wilderness, and (2) least affect the wilderness environment.

Consideration must be given to the ability of the wilderness resource to sustain visitor use without loss or degradation of the wilderness resource itself. The social, biological and physical limits of acceptable change may vary widely within and between wilderness areas due to variations in types and amounts of uses, resource characteristics and the capabilities of the resources to sustain different types and amounts of uses. The leading management tool and document to consider these factors and set guidelines for managing visitor use will be the Wilderness Management Plan. These plans will describe the level at which an area is able to absorb use and impacts and will describe measures needed to protect wilderness values.

Designation of the area as wilderness could increase recreation use and have some minor impacts on other resources. A major impact would occur to OHV and motorized recreation as it would be discontinued off of existing roads. Little OHV use occurs in the area, however, and mainly takes place on existing roads.

6. Lands and Realty Actions

Both the surface and subsurface within the study area is federally owned. The only permitted land use in the study area is for grazing of livestock (refer to the Livestock and Range Management Section for a discussion of that resource). There are no utility corridors or rights-of-way existing or proposed in the study area.

7. Soil and Vegetation

Increased visitor use could cause some soil compaction and erosion, particularly along travel routes or at campsites. These impacts would mainly be confined to such locations and would have only a small effect on the soil resource of the study area.

Some removal or loss of vegetation could be expected at and around campsites as a result of increased visitation. These impacts would be localized and probably light. There would be no impacts to vegetation in the remainder of the study area.

8. Cultural Resources

Prehistoric and historic archaeological sites and values are a unique and nonrenewable part of wilderness. To the extent consistent with the concept of wilderness preservation and the intent of the Wilderness Act and objectives for cultural resource management, these resources are available for recreation, scenic, scientific, education, conservation and historic uses (including ceremonial or religious use by Native Americans).

Cultural resources, in most instances, will be subject to the forces of nature in the same manner as other wilderness resources. Study or management will normally not include any excavation, stabilization or interpretation activities. Salvage, rehabilitation, stabilization, reconstruction and restoration work on prehistoric and historic archaeological sites; excavation; and intensive inventories may be permitted on a case-by-case basis where the project will not degrade the overall wilderness character of the area and such activity is needed to preserve the particular resource.

Adverse impacts upon cultural resource values are expected to be slight. Site specific impacts created by increased visitor use may occur, although the limited resource development and restricted vehicle use resulting from a wilderness designation would benefit cultural values.

9. Fire

All fires will be controlled to prevent loss of human life or property within wilderness or to prevent the spread of fire to areas outside of the wilderness where life, resources, or property may be threatened. Wildfires will be prevented or controlled unless the fire meets wilderness fire management objectives.

Natural fire (lightning-caused) is normally a part of the ecology of wilderness, and human efforts to ban this agent may have resulted in significant ecological changes in flora and fauna of some areas. In order to return some wilderness ecosystems to a more natural state, it may be appropriate to allow natural fire to burn, but only in conformance with an approved Fire Management Plan.

Where natural fire under prescription does not meet wilderness fire management objectives, prescribed burning with ignition by Bureau personnel may be allowed on a case-by-case basis for the following purposes:

(a) to reintroduce or maintain the natural condition of a fire-dependent ecosystem,
(b) to restore fire where past strict fire control measures had interfered with natural, ecological processes,
(c) where a primary value of a given wilderness will be perpetuated as a result of the burning or
(d) where it will perpetuate a threatened or endangered species.

Prescribed fires will be allowed only in conformance with an approved Fire Management Plan. State Director approval is required.

Temporary fire camps, helispots and other sites used for fire suppression or control activities shall be removed upon completion of use and the site rehabilitated to as natural a state as possible.

10. Water

Increased visitor use resulting from a wilderness designation could reduce water quality at some springs along streams or other natural water sources. These impacts would be due largely to improper sanitation, possible soil compaction and reduced vegetation near the water source. Firewood gathering and increased horseback use could also have some

effect on water quality. Overall, most impacts to water are anticipated to be minimal. Other than prescribed burning previously discussed, there are no proposed watershed restoration or water improvement projects in the area, so no impacts from a wilderness designation are anticipated.

11. Air

Air quality could receive some benefit under wilderness designation. Those activities that contribute to wind generated dust, such as soil disturbance created by road construction or vehicular travel, would be reduced or precluded. The current Class II air quality management standards would be continued if the area were to become wilderness. Air quality classifications are the responsibility of the State.

12. Visual Resources

A wilderness designation would be accompanied by a VRM Class I designation. A Class I designation provides that changes to the visual resource are primarily through natural ecological processes. Very limited management activity is not precluded. No changes to the visual resource of the area are anticipated if the area becomes wilderness.

Impact of Non-Designation on Wilderness

The study area has remained in a natural condition over time without the benefit of a wilderness designation. In the event that the study area is not designated as wilderness, there is not a great likelihood that the area's wilderness values would be impacted or lost.

Energy and mineral resource potential is not rated as favorable in the study area and no projects or developments that would impact lands in the study area are anticipated. If the area were not designated wilderness, the public lands in the study area would have VRM Class II and IV ratings. Small scale, localized activities and projects could occur in the area and create minor impacts to wilderness values or other resources.

Public Comment

Public comment on the study area and wilderness designation alternatives will be sought during the draft RMP comment period.

Local Social and Economic Effects

The social effects of a wilderness designation are not anticipated to be significant overall. Local preferences for recreational activities should be unaffected by a wilderness designation since opportunities for hunting, OHV use along roads and picnicking will still be available. Some people will obviously be concerned or upset with a wilderness designation. Those favoring wilderness may be pleased with a designation.

The economic effects of a wilderness designation for this study area are not expected to be significant. Impacts to mining and ranching were discussed earlier and considered not significant. However, some local people will probably remain skeptical as to the effects of a wilderness designation.

If the area was designated wilderness, visitor use could be expected to increase to the area. That would result in some increased spending for goods and services. Because the area is within a day's travel of Tucson and Phoenix, those expenditures could be made there resulting in little economic benefit to the local communities. Overall, economic benefits are not expected to be great.

Consistency With Other Plans

The *Graham County Planning Ordinance* (amended 1970) identifies current uses in the study area as ranching, grazing and mining. The *General Land Use Plan* identifies the area as "general: grazing, mining, recreation and hunting." Pinal County is preparing a comprehensive plan that would identify public lands under a "resource management" classification, leaving decisions on these areas to be made by the land managing agency. The current county zone map has the Aravaipa area under "General Rule," an all encompassing category that includes "public uses." Wilderness designation would not be inconsistent with either plan.

Analysis Summary

The Aravaipa Canyon Wilderness Additions study area has the characteristics required for wilderness designation. The 17,240 acres of public land meet the size requirement. The study area is natural in

character with the imprints of man limited to 9.4 miles of ways, 15 dirt tanks, five cement dams, two developed springs, one corral, 15.3 miles of fences and a RAWS weather station. These imprints are found scattered throughout the study area. They have only a minimal effect on naturalness.

Outstanding opportunities for solitude and primitive types of recreation are also found in the study area. Special features of the area include riparian habitat and perennial streams, threatened and endangered species including two species of native fish, important wildlife habitat, scenic geologic features and cultural resources. Multiple resource benefits, including the preservation of natural ecosystems, could be obtained by the designation of wilderness.

The study area is one of several potential additions to the National Wilderness Preservation System with the opportunity to expand the diversity of natural systems and features in the NWPS. The study area would not appreciably add to the opportunities already available in the NWPS for solitude or primitive recreation within a day's driving time from major population centers nor would it add significantly to the geographic distribution of the NWPS.

Preservation of the Aravaipa Canyon Wilderness Additions study area's wilderness character would be manageable in the long term.

No surface evidence exists for the presence of base and precious-metal occurrences in the study area though these minerals may lie at depth beneath surface volcanics. The geologic environment of the study area is not favorable for the accumulation of oil and gas resources. Geothermal resources are not known to exist in the study area.

Impacts to range, wildlife, timber, recreation, lands, soils, vegetation, cultural resources, fire, water, air and visual resources are not expected. If the study area were not designated as wilderness, it is not likely that the area's wilderness values would be lost.

The social and economic effects on local communities that could result from designating the area wilderness are expected to be minor. Wilderness is not inconsistent with the *Graham County Planning Ordinance* or on-going planning of Pinal County and its current zone map.

Formulation of Alternatives

From the evaluation of this study area, four alternatives were developed: all wilderness, no wilderness and two alternatives considering partial wilderness.

1. No Wilderness (No Action) Alternative

No acreage would be recommended for designation as wilderness. Management would be guided by the management prescriptions developed in the *Safford District Resource Management Plan* when it becomes final.

2. Partial Wilderness Alternative

About 6,684 acres of public land adjacent to BLM's existing Aravaipa Canyon Wilderness would be recommended for designation as wilderness. The alternative includes portions of nine side canyons that enter the wilderness. No State or private land inholdings would be within the recommended area.

The portions of the nine side canyons would be contained in eight separate blocks adjacent to ACW. The Painted Cave/Javelina addition would have a road on the north and east, ACW on the south and legal subdivision lines on the west as boundaries. The Horse Camp addition would be bounded by ridge lines, a way and legal subdivision lines on the north; a legal subdivision line, roads and ridge lines on the east; ACW on the south; and a ridge line and a road on the west. The boundaries of the Booger Canyon addition would follow ridge lines on the north and east, ACW on the south, and a ridge line and road on the west. The Hell Hole addition would be bounded by ridge lines on the north and east; a road, ridge line and ACW on the south; and a ridge line and road on the west.

On the south side of ACW, the Wire Corral addition is bounded on the north by ACW and on the east, south and west by ridge lines. The boundaries on the Parsons addition are ACW on the north, ACW and a ridge line on the east, a legal subdivision line and private land on the south, and a road on the west. The Virgus addition is bounded by ACW on the north and ridge lines on the east, south and west. The boundaries of the Hells Half Acre addition are ACW on the north, private land on the east, a legal subdivision line and a road on the south, and private land on the west.

This alternative would designate wilderness that is a logical extension of the existing Aravaipa Canyon Wilderness and provide manageable additions of the side canyons that enter the wilderness. Those portions of the study area not recommended for wilderness designation in this alternative would be managed according to the management prescriptions developed in the *Safford District Resource Management Plan* when it becomes final.

3. Partial Wilderness Alternative

About 14,020 acres of public land adjacent to Aravaipa Canyon Wilderness would be recommended for designation as wilderness. The alternative would also include 720 acres of private land in two parcels. Three separate additions, two on the north and one on the south, would be made to ACW.

The Painted Cave/Javelina addition would have a road on the north and east, ACW on the south, and legal subdivision lines on the west as boundaries. The Horse Camp/Booger/Hell Hole addition would be bounded on the north by a way, legal subdivision lines and roads; on the east by ridge lines and a road; on the south by ACW; and on the west by a road. The South addition would have ACW on the north, and roads and private land on the east, south and west as boundaries. Four cherrystem roads would enter into the area.

The alternative would add to the existing Aravaipa Canyon Wilderness while reducing potential conflicts with an area of intensive grazing management in the northern Horse Camp Canyon area. The area proposed for wilderness designation in this alternative would not include 725 acres of public land west of Painted Cave Canyon and 2,495 acres of public land in north Horse Camp Canyon in the study area. The South addition is identical to the study area boundaries.

Those portions of the study area not recommended for wilderness designation in this alternative would be managed according to the management prescriptions developed in the *Safford District Resource Management Plan* when it becomes final.

4. All Wilderness Alternative

All 17,240 acres of public land in the study area would be recommended for designation as wilderness. Two private inholdings totaling 720 acres would be included in this alternative. Conflicts with other resource uses including intensive range management could result. Management would be guided by BLM's Wilderness Management Policy and manuals.

APPENDIX 4

Galiuro Wilderness Additions

Introduction

A land exchange with the State of Arizona was completed in April 1986 that resulted in BLM's acquisition of about 27,000 acres of the Muleshoe Ranch. Prior to the exchange, BLM managed small scattered parcels of land within and surrounding the ranch. The block of contiguous public lands now under BLM administration is adjacent to the southern end of the Coronado National Forest in the Galiuro Mountains.

Congress designated the Galiuro Wilderness under U.S. Forest Service administration in 1964 and added to it in 1984. Prior to the land exchange, BLM administered 640 acres adjacent to the forest and wilderness. That parcel, known as Galiuro Addition #3, was recommended for wilderness designation, under the provisions of Section 603 of FLPMA.

Following the exchange and at the beginning of the *Safford District Resource Management Plan* (RMP) preparation, the issue of expanding the above recommendation and considering the wilderness potential of the remainder of the acquired lands was raised by conservation groups and the public. That issue is being addressed through this report and the RMP, under the provisions of Section 202 of FLPMA.

The *Galiuro Wilderness Additions Wilderness Inventory Report* identified about 14,980 acres of public land having wilderness characteristics as defined by the Wilderness Act of 1964 (P.L. 88-577). The study area is composed of the Bass Canyon unit and the Swamp Springs Canyon unit divided by the Jackson Cabin road.

This report evaluates the wilderness values of the study area, the ability to manage it as wilderness, other resource values present in the area and the effects wilderness designation would have on other resources.

Evaluation of Wilderness Values

1. Mandatory Wilderness Characteristics

Size - The study area contains 14,980 acres of public land in two units divided by the Jackson Cabin road. The Bass Canyon unit has 5,520 acres of public land and the Swamp Springs Canyon unit has 9,460 acres of public land. No private or State land inholdings are within the study area. The study area meets the size requirement.

Naturalness - The imprint of man's work is substantially unnoticeable throughout the study area. Developments are widely scattered and small scale, mostly unobtrusive range improvements such as fences, small dirt tanks and dams. Following is a summary of the imprints of man's work.

- 2 dirt tanks
- 2 cement dams
- 3.4 miles of fences
- 1 well
- 1 mining area (prospects)

Legal descriptions of imprints are listed in Table 2 of the *Galiuro Wilderness Additions Wilderness Inventory Report*.

Fences in the study area are widely scattered and have little impact on the area's naturalness. The low profile and lack of bladed fencelines contribute to the substantially unnoticeable character of these developments.

The remainder of the imprints of man's work - dirt tanks, cement dams, well and mining prospects - found in the study area are rather small in character. The field of view that each could be seen from is greatly restricted by topography. They are also dispersed throughout the area and do not cause a significantly noticeable effect on the naturalness of the area.

None of the imprints of man's work are so grouped as to have a cumulative effect on the area's naturalness. The 14,980 acres of public land in the study area appears to be affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable.

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

Bass Canyon Unit - Outstanding opportunities for solitude are present in the unit. Bass Canyon, West Fork Bass Canyon and Hackberry Canyon in the southern portion of the unit provide excellent opportunities for individuals to find seclusion. Riparian vegetation in these canyons tends to screen people from one another and further contributes to the outstanding opportunities for solitude. In the northern portion of the unit, the escarpment of the Galiuro Mountains separates and effectively isolates the west from the east half of that area. Several side canyons drain away to the east cutting up the terrain. Upland vegetation of pinyon and juniper also breaks up the view and lends to the feeling of being alone in the area.

Outstanding opportunities for hiking, backpacking, horseback riding, camping, hunting, sightseeing and photography are available in the Bass Canyon unit. These activities can be enjoyed throughout the area. The cliffline in the northern portion of the unit is a particularly striking feature as a subject for photography and sightseeing. The undeveloped nature of the canyons allows for an outstanding primitive and dispersed opportunity to hike and camp. The opportunities in the area are considered outstanding both in quality and diversity of available activities.

Swamp Springs Canyon Unit - This portion of the study area has outstanding opportunities for solitude. Parts of Sycamore, Redfield, Swamp Springs and Cherry Spring Canyons, as well as their side canyons, are found in the northern portion. The twisting nature of these canyons and the dense vegetation in most of the bottoms creates numerous sites for seclusion. Intervening ridges further dissect the terrain and restrict the view potential visitors could have of one another. Wildcat Canyon cuts across the southern part of the unit. These canyons and their varied nature combine with the vegetation and rugged upland topography to create an outstanding opportunity for solitude in the unit.

Hiking, horseback riding, backpacking, camping, sightseeing, photography and wildlife observation are some of the outstanding primitive recreation opportunities present in the Swamp Springs Canyon unit. The many canyons and tributaries in the north provide a particularly suitable situation for personal exploration and challenging primitive recreation activities. These opportunities are dispersed throughout that area. The opportunities in the unit are considered outstanding both in quality and diversity of available activities.

2. Special Features

The study area contains several ecologic, geologic and other features of scientific, educational, scenic or historic value. Many of the canyons support a riparian environment that is increasingly valuable to wildlife in the rapidly developing desert Southwest. Desert bighorn sheep and rare native fish are among the wildlife found in the inventory units. The massive escarpment in the Bass Canyon unit is an impressive example of the fault block development of the Galiuro range and Basin and Range mountains in general. The striking cliffline and the deep canyons of the Swamp Springs Canyon unit are scenic features not common in the region. Abandoned homesteads and cabins in the units are remnants of historic attempts to occupy and use the land. Archaeological resources are also present in the area.

3. Multiple Resource Benefits

The lands contained in the study area have multiple resource benefits that led to their acquisition in 1986. Interim guidelines for management of the Muleshoe lands were developed following the acquisition.

Watershed benefits include managing five perennial streams totalling 11.5 miles to stabilize runoff and reduce intensity of floods. Wildlife benefits include enhancing habitat for threatened and endangered species, big game and other species of high interest to the public; enhancing mixed broadleaf riparian habitat; introducing additional native fish populations; and managing upland habitat to return mesquite brush invaded rangelands to original grasslands. Recreation management would provide outstanding hiking and backpacking experiences, better access into the Galiuro Wilderness, hunting and birdwatching in quality riparian and upland habitats. Cultural resource opportunities are to manage several known rock shelters and high potential cultural resource areas along perennial streams, conduct cultural resource inventories as none exist on the acquired lands and recognize historic sites in the area. Range management benefits include actions to improve range conditions and better maintenance of range improvements.

The relative permanency of a wilderness designation would extend protection and provide multiple resource benefits to resources in the study area not specifically addressed in the interim guidelines. Wilderness designation would preserve and protect natural ecosystems and plant communities, soils and watershed throughout the area. The closure of the

area to OHVs, mineral leasing and mining (subject to valid existing rights) could reduce disturbance of wildlife and cultural resources more than would be possible otherwise.

4. Diversity in the National Wilderness Preservation System (NWPS)

The Galiuro Wilderness Additions study area is located in the Mexican Highlands Shrub Steppe/Oak-juniper woodland ecosystem as defined by Bailey (1976) and Kuchler (1966). The ecosystem is currently represented in the NWPS by seven wildernesses in Arizona. Six of the wildernesses in this ecosystem are administered by the U.S. Forest Service (USFS) and one by the National Park Service (NPS). The oak-juniper woodland ecosystem has ten areas under study for wilderness designation administered by BLM and USFS in Arizona and New Mexico.

Though few wildernesses are present in the ecosystem, there are several potential representative additions. The study area is one of several opportunities to expand the diversity of natural systems and features in the NWPS.

The study area is within a day's drive (250 miles) of two major metropolitan centers, Tucson and Phoenix, Arizona. Outstanding opportunities for solitude and primitive, unconfined recreation are available within a day's drive of Tucson in:

- 43 designated wildernesses in Arizona and New Mexico administered by USFS, NPS and BLM and
- 85 areas under wilderness study by USFS, BLM and Fish and Wildlife Service (FWS).

These opportunities are within a day's drive of Phoenix in:

- 51 designated wildernesses in Arizona, New Mexico and California administered by USFS, NPS and BLM,
- 4 areas administratively endorsed for wilderness in Arizona and California administered by FWS and
- 124 areas under wilderness study in Arizona, New Mexico and California administered by USFS, NPS and BLM.

Considering the number of existing, endorsed and study areas already present, wilderness designation of the study area would not appreciably add to the opportunities already available in the NWPS for solitude or primitive recreation within a day's driving time of the two cities.

The geographic distribution of existing, endorsed and potential wilderness areas in Arizona and New Mexico is evenly spread throughout Arizona except for the Navajo Indian Reservation in the northeast part of the State and is distributed evenly north to south in New Mexico but concentrated in the central to western part of the State. Arizona has 45 existing wilderness areas administered by the USFS, NPS and BLM, and 56 areas, most managed by BLM, under study for wilderness designation. New Mexico has 22 existing wildernesses administered by the USFS, BLM and FWS, and 53 areas, most administered by BLM, under study for wilderness designation.

The Galiuro Wilderness Additions study area would not add significantly to the geographic distribution of the NWPS.

Manageability

The study area is a manageable unit that could preserve the wilderness character of the land in the long term. Both surface and subsurface in the study area is administered by the BLM. No State or private land inholdings are within the study area.

Access to this remote, rugged area is by foot or four-wheel drive vehicle on the boundary roads. There are no mining claims, oil and gas leases, or geothermal leases or applications pending in the study area. Oil and gas lease applications have been received on lands to the southwest. Although the study area is under grazing lease, it appears that would not affect preservation of the area as wilderness in the long term.

Impacts on Other Resources

1. Energy and Minerals

Under the *Wilderness Act*, the lands designated as wilderness are withdrawn from all forms of appropriation under the mining laws and are withdrawn from leasing under the mineral leasing laws, subject to valid existing rights. Generally, some prospecting and exploration work could take place under the mining laws, but no new claims could be filed. No new mineral leasing would be allowed. This provision has the potential to impact the removal of energy and mineral resources not covered under valid existing rights as of the date of designation.

The Bureau of Mines conducted a mineral investigation of about 60,000 acres of the Muleshoe area in 1988. The resulting report,

Mineral Investigation of the Muleshoe Study Area, Cochise and Graham Counties, Arizona, concluded that two areas on the boundaries of the study area had occurrences or anomalous metal concentrations and warrant additional exploration. Those two locations are the Now prospects at the edge of the southern boundary of the Swamp Springs Canyon unit and in Redfield Canyon along the northwest boundary of the study area. The Now prospects are accessible by road while the location in Redfield Canyon is not.

Otherwise, there has been no mineral production from the area and the Muleshoe area is not in any organized mining district. Sand and gravel occurs in the canyons in the study area but the inaccessibility of the area and the abundance of sand and gravel throughout the region would preclude anything but local use.

The U.S. Geological Survey (USGS) has rated the petroleum potential of the study area as low. The Arizona State Bureau of Geology and Mineral Technology has rated the area surrounding Warm Springs and Hookers Hot Springs southwest of the study area favorable for low temperature geothermal resources.

Designation of the Galiuro Wilderness Additions study area as wilderness would have little impact on energy and minerals. This is due to the area's low potential for mineral, oil and gas and geothermal resources.

2. Livestock and Range Management

A portion of the Muleshoe Allotment exists within the study area. This Intensive allotment is held by The Nature Conservancy and supports a grazing preference of 336 cattle yearlong or 4,032 AUMs on federal range. The allottee is currently taking non-use of the allotment.

Several range management facilities exist within the study area. These are described in the Naturalness section of this report.

Livestock grazing is permitted in designated wilderness areas where it was established prior to designation. Associated with livestock grazing are various required facilities. Existing facilities may continue to be maintained. If those facilities are found to be no longer necessary through environmental analysis, they may be phased out and removed. New facilities may be constructed if it is determined they are necessary for the purpose of resource protection (both rangeland and wilderness) and effective management rather than to accommodate increased numbers of livestock.

Methods of construction or maintenance, materials use, necessary equipment and access requirements will be addressed through environmental analysis. The analysis will give consideration to construction or maintenance standards and techniques that will achieve the most practical and reasonable approach considering the wilderness resource. This may also include use of motorized equipment and vehicles.

A portion of the allotment is being proposed for non-grazing of livestock. The area includes the rugged parts of the allotment containing Swamp Springs, Sycamore and Redfield Canyons in the north, Hackberry, West Fork Bass and Bass Canyons in the east and Wildcat and Hot Springs Canyons in the south. Intensive management of livestock grazing would be concentrated on the remainder of the allotment. Wilderness designation of that portion of the study area would restrict some actions needed for intensive livestock grazing management.

Prescribed fire is proposed to restore the productivity of a portion of the range within the study area. Prescribed fires may be allowed in a wilderness when done in accordance with an approved Fire Management Plan and to restore or benefit wilderness values. A discussion of prescribed burning is included in the Fire section of this report.

Impacts upon the rangeland resource will be minimal. Maintenance of existing facilities may continue and new ones may be constructed. However, protection of the wilderness resource is the important consideration that must be evaluated.

3. Wildlife

Wilderness management seeks a natural distribution, number and interaction of indigenous species of wildlife. Natural processes will be allowed to occur in wilderness ecosystems that include wildlife populations, as far as possible without human influences. Management will protect the conditions that allow natural processes a maximum degree of freedom.

To the extent possible, wildlife species in BLM wilderness should be allowed to maintain a natural balance with their habitat and with each other. Wildlife may be harvested under State regulations and direct wildlife control measures will be applied only upon a showing of need.

The basic responsibilities of the BLM and other cooperating State and federal agencies in the management of wildlife are not altered by the *Wilderness Act*. However, the constraints of the Act

and the intent of Congress articulated in the Act and in subsequent legislation will guide the management of wildlife in wilderness. Wilderness Management Plans and Habitat Management Plans will specify wildlife habitat conditions to be maintained.

A wilderness designation could affect wildlife by attracting more use, including hunting and non-consumptive wildlife viewing. Increased visitation could also put more pressure on riparian areas that provide important wildlife habitat and nesting sites. Animals that are listed as T&E or are proposed for listing may also be sensitive to more people using the area. The degree of these impacts would generally correspond with the number of people visiting the area and, in most cases, is expected to be minor.

The preservation of sensitive, rare, threatened and endangered species dependent on wilderness conditions will be favored.

Wilderness designation will have very little impact on management of wildlife in the study area. Based upon current management practices, future management anticipated, laws and policies, very little impact is anticipated.

4. Timber

There is no present use of forest products in the study area, so there will be no impact created by a wilderness designation. Current planning documents do not authorize harvesting of forest products nor, historically, has there been a demand to do so.

5. Recreation

Wilderness allows a variety of uses including, but not limited to, recreation, scenic, scientific, education, conservation and historic.

The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use. There are places and times within wilderness where unique values may require that recreation and visitor use activities be restricted or entirely prohibited in order to preserve an enduring resource of wilderness. The highest priority among various kinds of visitor use will be accorded those activities which, (1) are most dependent upon the wilderness environment and cannot be reasonably accommodated outside the wilderness and (2) least affect the wilderness environment.

Consideration must be given to the ability of the wilderness resource to sustain visitor use without loss or degradation of the wilderness resource itself. The social, biological and physical limits of acceptable change may vary widely within and between wilderness areas due to variations in types and amounts of uses, resource characteristics and the capabilities of the resources to sustain different types and amounts of uses. The leading management tool and document to consider these factors and set guidelines for managing visitor use will be the Wilderness Management Plan. These plans will describe the level at which an area is able to absorb use and impacts and will describe measures needed to protect wilderness values.

Designation of the area as wilderness could increase recreation use and have some minor impacts on other resources. A major impact would occur to OHV and motorized recreation as it would be discontinued off of existing roads. Little OHV use occurs in the area, however, and mainly takes place on existing roads.

6. Lands and Realty Actions

Both the surface and subsurface within the study area is federally owned. The only permitted land use in the study area is for livestock grazing (refer to the Livestock and Range Management section for a discussion of that resource). There are no utility corridors or rights-of-way existing or proposed in the study area. The All-American Pipeline and El Paso Natural Gas Pipeline right-of-way corridors form a portion of the study area's southern boundary in the Swamp Springs Canyon unit.

7. Soil and Vegetation

Increased visitor use could cause some soil compaction and erosion, particularly along travel routes or at campsites. These impacts would mainly be confined to such locations and would have only a small effect on the soil resource of the study area.

Some removal or loss of vegetation could be expected at and around campsites as a result of increased visitation. These impacts would be localized and probably light. There would be no impacts to vegetation in the remainder of the study area.

8. Cultural Resources

Prehistoric and historic archaeological sites and values are a unique and nonrenewable part of wilderness. To the extent consistent with the concept of wilderness preservation and the intent of the

Wilderness Act and objectives for cultural resource management, these resources are available for recreation, scenic, scientific, education, conservation and historic uses (including ceremonial or religious use by Native Americans).

Cultural resources, in most instances, will be subject to the forces of nature in the same manner as other wilderness resources. Study or management will normally not include any excavation, stabilization or interpretation activities. Salvage, rehabilitation, stabilization, reconstruction and restoration work on archaeological and historic sites; excavation; and intensive inventories may be permitted on a case-by-case basis where the project will not degrade the overall wilderness character of the area and such activity is needed to preserve the particular resource.

Adverse impacts upon cultural resource values are expected to be slight. Site specific impacts created by increased visitor use may occur, although the limited resource development and restricted vehicle use resulting from a wilderness designation would benefit cultural values.

9. Fire

All fires will be controlled to prevent loss of human life or property within wilderness or to prevent the spread of fire to areas outside of the wilderness where life, resources or property may be threatened. Wildfires will be prevented or controlled unless the fire meets wilderness fire management objectives.

Natural fire (lightning-caused) is normally a part of the ecology of wilderness and human efforts to ban this agent may have resulted in significant ecological changes in flora and fauna of some areas. In order to return some wilderness ecosystems to a more natural state, it may be appropriate to allow natural fire to burn, but only in conformance with an approved Fire Management Plan.

Where natural fire under prescription does not meet wilderness fire management objectives, prescribed burning with ignition by Bureau personnel may be allowed on a case-by-case basis for the following purposes:

(a) to reintroduce or maintain the natural condition of a fire-dependent ecosystem,

(b) to restore fire where past strict fire control measures had interfered with natural, ecological processes,

(c) where a primary value of a given wilderness will be perpetuated as a result of the burning or

(d) where it will perpetuate a threatened or endangered species.

Prescribed fires will be allowed only in conformance with an approved Fire Management Plan. State Director approval is required.

Temporary fire camps, helispots and other sites used for fire suppression or control activities shall be removed upon completion of use and the site rehabilitated to as natural a state as possible.

10. Water

Increased visitor use resulting from a wilderness designation could reduce water quality at some springs, along streams or other natural water sources.

These impacts would be due largely to improper sanitation, possible soil compaction and reduced vegetation near the water source. Firewood gathering and increased horseback use could also have some effect on water quality. Overall, most impacts to water are anticipated to be minimal. Other than prescribed burning previously discussed, there are no proposed watershed restoration or water improvement projects in the area, so no impacts from a wilderness designation are anticipated.

11. Air

Air quality could receive some benefit under wilderness designation. Those activities that contribute to wind generated dust, such as soil disturbance created by road construction or vehicular travel, would be reduced or precluded. The current Class II air quality management standards would be continued if the area were to become wilderness. Air quality classifications are the responsibility of the State.

12. Visual Resources

A wilderness designation would be accompanied by a VRM Class I designation. A Class I designation provides that changes to the visual resource are primarily through natural ecological processes. Very limited management activity is not precluded. No changes to the visual resource of the area are anticipated if the area becomes wilderness.

Impact of Non-Designation on Wilderness

The study area has remained in a natural condition over time without the benefit of a wilderness designation. In the event that the study area is not designated as wilderness, there is not a great likelihood that the area's wilderness values would be impacted or lost.

Energy and mineral resource potential is rated as low and no projects or developments that would impact lands in the study area are anticipated. If the area does not become wilderness, the public lands in the study area would have VRM Class II and IV ratings. Small scale, localized activities and projects could occur in the area and create minor impacts to wilderness values or other resources.

Public Comment

Public comment on the study area and wilderness designation alternatives will be sought during the public review of the draft RMP.

Local Social and Economic Effects

The social effects of a wilderness designation are not anticipated to be significant overall. The local preferences for recreational activities should be unaffected by a wilderness designation since hunting, OHV use along roads and picnicking will still be available. Some people will obviously be concerned or upset with a wilderness designation. Those favoring wilderness may be pleased with a designation.

The economic effects of a wilderness designation for this study area are not expected to be significant. Even though impacts to mining and ranching were discussed earlier and considered insignificant, some local people will probably remain skeptical as to the effects of a wilderness designation.

If the area were designated wilderness, visitor use could be expected to increase to the area. That could result in increased spending for goods and services. Because the area is within a day's travel of Tucson and Phoenix, those expenditures could be made there resulting in little economic benefit to the local communities, but the economic benefits are not expected to be great.

Consistency with Other Plans

The *Graham County Planning Ordinance* (amended 1970) identifies current uses in the study area as ranching, grazing and mining. The *General Land Use Plan* identifies the area as "general: grazing, mining, recreation and hunting." The *Cochise County Comprehensive Plan* identifies the area for "resource conservation." Wilderness designation is not inconsistent with either plan.

Analysis Summary

The Galiuro Wilderness Additions study area has the characteristics required for wilderness designation. The 14,980 acres of public land meet the size requirement. The study area is natural in character with the imprints of man limited to two dirt tanks, two cement dams, one well, one area of mining prospects and 3.4 miles of fences. Most of those imprints are found scattered in the southern part of the Swamp Springs Canyon unit. They have only a minimal effect on naturalness. The remainder of the imprints are widely dispersed in the rest of the study area and do not affect its naturalness.

Outstanding opportunities for solitude and primitive types of recreation are also found in the study area. Special features of the area include several miles of riparian habitat and perennial streams, important wildlife habitat, scenic geologic features and cultural resources. Multiple resource benefits, including the preservation of natural ecosystems, could be obtained by the designation of wilderness.

The study area is one of several potential additions to the National Wilderness Preservation System with the opportunity to expand the diversity of natural systems and features in the NWPS. The study area would not appreciably add to the opportunities already available in the NWPS for solitude or primitive recreation within a day's driving time from major population centers nor would it add significantly to the geographic distribution of wilderness in the NWPS.

Preservation of the Galiuro Wilderness Additions study area's wilderness character would be manageable in the long term. Mineral occurrences needing more exploration lie at the boundaries of the study area. Oil and gas potential in the study area has been rated as low by USGS. Geothermal resources are not known to exist in the study area though a favorable low temperature resource is present to the southeast.

Impacts to range, wildlife, timber, recreation, lands, soils, vegetation, cultural resources, fire, water, air and visual resources are not expected. If the study area were not designated as wilderness, it is not likely that the area's wilderness values would be lost.

The social and economic effects on local communities that could result from designating the area wilderness are expected to be minor. Wilderness is not inconsistent with the *Graham County Planning Ordinance* and *General Land Use Plan* and the *Cochise County Comprehensive Plan.*

Formulation of Alternatives

From the evaluation of this study area four alternatives were developed: all wilderness, no wilderness and two alternatives considering partial wilderness.

1. No Wilderness (No Action) Alternative

No additional acreage would be recommended for designation as wilderness beyond the existing 640 acres recommended as suitable. Management would be guided by the management prescriptions developed in the *Safford District Resource Management Plan* when it becomes final.

2. Partial Wilderness Alternative

About 2,045 acres of public land adjacent to the Galiuro Wilderness (USFS) would be recommended for designation as wilderness. The alternative covers the northern portion of the Bass Canyon unit of the study area and is also adjacent to the 640 acre Galiuro Addition #3 (BLM) previously recommended for wilderness designation. The combined acreage of the two areas would be about 2,685. No State or private land inholdings would be within the recommended area.

The northern boundary would be the Galiuro Wilderness in the Coronado National Forest. The eastern boundary would be State land. The southern boundary would follow the ridge line dividing the drainage southward into West Fork Bass Canyon from the drainage to the east and north into Redus and Swamp Springs Canyons. The western boundary would be the Jackson Cabin road. The area would include about two miles of cliffline at the southern end of the Galiuro Mountains and the upper ends of Redus and Swamp Springs Canyons. This alternative would designate wilderness that is a logical extension of the existing Galiuro Wilderness and provide a manageable addition with identifiable boundaries to the south end of the wilderness.

Those portions of the study area not recommended for wilderness designation in this alternative would be managed according to the management prescriptions developed in the *Safford District Resource Management Plan* when it becomes final.

3. Partial Wilderness Alternative

About 10,920 acres of public land would be recommended for designation as wilderness. All 5,520 acres of the Bass Canyon unit and a portion (5,400 acres) of the Swamp Springs Canyon unit would be included in this alternative. The Bass Canyon unit is adjacent to the Galiuro Wilderness (USFS) on the north and the 640 acre recommended Galiuro Addition #3 (BLM) on the northeast, with a combined acreage of 11,500 acres. The alternative would also include 30 acres of private land on the western boundary and 890 acres of State land containing portions of Swamp Springs and Redfield Canyons. The State land is proposed for acquisition through exchange with BLM. The recommended area in this alternative would be divided by the Jackson Cabin road.

The area that would be designated wilderness under this alternative is bounded on the north by State and private land and the Coronado National Forest, on the east by State and private land, and on the south by private land. The western boundary follows the ridge line to the south of Swamp Springs Canyon through Cherry Spring Peak and along the prominent north-south ridge south of the peak. The alternative would add to the existing Galiuro Wilderness while reducing potential conflicts with other resources in the south and west portions of the study area. The area of mining prospects having identified occurrences of metal concentrations would not be included as well as some range improvements and the area of intensive grazing management. The area proposed for non-grazing of livestock is within the area recommended for wilderness designation in this alternative.

Those portions of the study area not recommended for wilderness designation in this alternative would be managed according to the management prescriptions developed in the *Safford District Resource Management Plan* when it becomes final.

4. All Wilderness Alternative

All 14,980 acres of public land in the study area would be recommended for designation as wilderness. No State or private inholdings would be included in this alternative. Conflicts with other resource uses including mining and intensive range management could result. Management would be guided by BLM's Wilderness Management Policy and manuals.

Appendix 5

Wild and Scenic River Study Reports

Gila Box Segment 231
Coolidge Dam to Hayden/Winkelman Tailings Pond Segment 238

Gila River
Gila Box Segment

Introduction

The National Park Service completed the first nationwide inventory of significant free-flowing rivers in January 1982, in partial fulfillment of the requirements of the *Wild and Scenic Rivers Act* (Public Law 90-542). A 26 mile stretch of the Gila River was identified as eligible for study as a potential wild, scenic or recreational river. An eight mile stretch of the San Francisco River (from its confluence with the Gila and upstream) is also being studied.

Through this study report, eligibility is documented and classification is determined to formulate alternatives for designation of the river under the Act. Interim management and protection considerations for the study river are also outlined.

A determination of suitability provides the basis for recommending designation or non-designation of a river segment as part of the National Wild and Scenic Rivers System. All eligible segments of the river are evaluated for suitability in the RMP based on manageability considerations, impacts on resources, and social and economic considerations. Other factors considered include characteristics of the area, land ownership and land use, potential uses, public interest, cost of needed land acquisition, valid existing rights, and other issues and concerns identified in the planning process.

Location/Description of Study Area

The study area is located in Graham and Greenlee Counties in southeastern Arizona. The rivers flow through a steep-walled canyon within the Gila Box area. This area, known for its 1000-foot deep canyons, lies between the Gila Mountains and the Black Hills. Running water, rugged and colorful terrain, highly eroded geologic formations, and diversity of plants and animals produce outstanding scenery.

Climatic conditions in the study area are similar to those found throughout the region. In southeast Arizona, lowlands alternate with mountains to create abrupt changes in climatic conditions over short distances. Annual rainfall averages 7 to 16 inches in the valleys, with most falling in the late summer months. Dry conditions are most common from April to June, with less severe dry conditions occurring in the fall.

The study area includes 15,413.62 acres, of which 14,113.80 acres are under BLM administration with the remainder in private ownership. This includes a total of 33.75 miles of river, with 30.75 miles under BLM administration. The remainder is in private ownership.

The study area begins in the NE1/4 Section 3, Township 6 South, Range 30 East and runs downstream to the NW1/4 Section 29, Township 6 South, Range 28 East. This section includes the Gila River portion of the study area. A total of 26.05 miles of the Gila River have been studied.

The San Francisco section begins in the NW1/4 Section 7, Township 5 South, Range 30 East and runs downstream to its confluence with the Gila River (Section 21, Township 5 South, Range 29 East). A total of 7.7 miles of the San Francisco River has been studied.

An additional 1/2 mile of Gila River downstream of the above description was included in the Nationwide Rivers Inventory. This stretch was not studied because of the presence of a diversion dam, canal, road and extensive physical alterations of the river.

Study area boundaries vary in distance from the river banks. Steep walled canyons make it difficult to establish boundaries at 1/4 mile distances on either side. Due to the nature of the study area, boundaries were established to enclose the canyon proper. In some locations, areas beyond 1/4 mile have been included in the study area to facilitate better management of the resources of the river area and better identification of the boundary. In places, boundaries include an area as far as 1/2 mile from the river and in others the boundary may be less than 1/4 mile from the river, depending on the proximity of the canyon walls.

Several special features enhance the river's potential for inclusion in the wild and scenic river system. The portion under study is free-flowing for the entire length. Natural qualities of this river have made it an increasingly popular rafting and canoeing area. Riparian vegetation, uncommon in the southwestern United States, greatly enhances wildlife habitat. This area is well known for its population of wintering bald

eagles. In addition, there are many outstanding scenic areas with steep cliffs, colorful bluffs, deep canyons and excellent examples of geological erosion. Prehistoric and historic sites have been recorded that qualify for listing on the National Register of Historic Places.

Criteria Considered in Developing the Alternatives

Development of alternatives is based on: a determination of eligibility; classification of the river segment as wild, scenic or recreational; consideration of social and economic effects; impacts on resources; and mangeability of potential designations. The study is conducted through the *Safford District Resource Management Plan* (RMP) in response to issues and concerns identified in the planning process.

Planning criteria were established in the early stages of the RMP process to arrive at decisions to be made in the RMP. Criteria include: resource values; manageability of an area to preserve its resource values; existing wild and scenic river representation; current and potential land uses; effects of designation on other resources and uses; effects of non-designation on resource values; social and economic effects; public interests and attitudes; consistency of the designation with resource plans of other federal, State and local governments and Indian tribes; and consultation with federal, State and local agencies, the scientific community and individuals.

1. Evaluation of River Values

The study area is a free-flowing river that contains many outstandingly remarkable values including scenic, recreation, geologic, fish and wildlife, hydrologic, historic and cultural values. Twisting canyons, steep cliffs, erosional features, vegetation, free-flowing streams and geologic formations contribute to the outstanding scenery. The study area also contains what is referred to as the last "free-flowing stretch of the Gila River in Arizona." The Gila and San Francisco are both perennial rivers.

Many opportunities for a wide variety of recreational activities are available. The rivers provide outstanding opportunities for hiking/backpacking, seasonal floatboating, camping, photography, seasonal OHV use and sightseeing. There are also good opportunities for hunting, fishing, rock climbing, horseback riding and birdwatching. Floatboating use is steadily increasing during late winter and early spring. The exceptional natural condition of the area, rugged topography, twisting canyons and flowing rivers all help to provide outstandingly remarkable opportunities for recreation.

The area is composed of volcanic and volcaniclastic rocks ranging from Pleistocene to Oligocene in age. These flows and pyroclastics are chiefly andesites and basaltic andesites. There are geothermal features at Gillard Hot Springs. Outstandingly remarkable geologic features include highly eroded volcanic and conglomerate formations.

Animal life in the study area is greatly enhanced by the perennial rivers and their riparian vegetation. Riparian vegetation contributes to terrestrial wildlife density and diversity. Bald eagles and peregrine falcons, State and federally listed endangered species, occur in the area. Other State listed species found in the study area are the black-bellied whistling duck, black hawk, osprey, snowy egret, great egret and black-crowned night heron. Coati and the Arizona mountain kingsnake are found in the study area and are of concern due to their limited distribution in Arizona.

Aquatic species include game fish such as channel and flathead catfish. Many other aquatic species depend on the perennial rivers, including the federally threatened loach minnow and State listed razorback sucker, both found in the study area.

Big game species found in the study area are javelina, mule deer and Rocky Mountain bighorn sheep. Game birds are quail, dove, numerous duck species, geese and band-tailed pigeons. A very rich assortment of nongame species occur due the presence of water and the riparian habitat.

The Gila and San Francisco Rivers are perennial. Since perennial rivers are very uncommon in the Southwest, the hydrologic values are outstandingly remarkable. They are also extremely important for the vegetation, fish and wildlife, and recreation values associated with these rivers.

This segment of the Gila River has outstandingly remarkable cultural resource values. At least 11 historic and 14 prehistoric sites are located in the study area. Undoubtedly, many more have yet to be recorded. Two historic and two prehistoric sites qualify for listing on the National Register of Historic Places.

2. Other River Values

In addition to those values described above, the river also contains the following significant values. Four

major vegetation types are present in the study area: grassland, mountain shrub, desert shrub and riparian. Riparian vegetation is worthy of preservation due to the disappearance of the majority of this type in the arid Southwest. Riparian vegetation is characterized by Fremont cottonwood, Goodding willow, Arizona sycamore, Arizona walnut, velvet ash, seep willow, burro brush, netleaf hackberry and mesquite. The condition of the riparian vegetation in the study area is poor to fair in most places, with limited amounts in good condition. Riparian values of these rivers, however, are still significant due to the limited distribution of this vegetation type.

3. Eligibility Determination

To be eligible for inclusion in the Wild and Scenic Rivers System, the river segment being studied must be 1) free-flowing and 2) possess one or more outstandingly remarkable values. Taken from the Act, free-flowing means ... "existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway." A river segment flowing between large impoundments will not necessarily be precluded from designation. Flows are considered sufficient if they sustain or complement the outstandingly remarkable values for which the river would be designated. Outstandingly remarkable values include scenic, recreation, geologic, fish and wildlife, historic, cultural or similar values.

BLM has determined a total of 33.75 miles are eligible for inclusion in the National Wild and Scenic Rivers System. This includes 7.7 miles of the San Francisco River and 26.05 miles of the Gila River. Only one part of the study area was determined ineligible for inclusion in the National Wild and Scenic River System. This is 0.5 mile on the lower portion of the study area around the Brown canal. The presence of a diversion dam, canal, road and extensive physical alteration of the river has made that part of the study area ineligible for inclusion.

4. Classification Determination

This section identifies the classification that best describes each eligible river segment as viewed in its existing condition. Five segments have been classified.

Segment 1 (Gila River NW1/4 Sec. 3, T. 6 S., R. 30 E. to SE1/4 Sec.26, T. 5 S., R. 29 E.). Segment 1 includes a total of 6.85 miles, of which 0.90 mile crosses private land. This segment includes 2,801.55 acres of public land and 240.00 acres of private land.

A Scenic classification best describes this segment of the river. This area possess outstandingly remarkable scenic, recreation, geologic, and fish and wildlife values. This segment is very scenic and is a popular starting point for people floating the river. The area is accessible by only one road. Also, there are only a few minor developments along the river. This section is free from impoundments and the shorelines are largely primitive and undeveloped.

The Old Safford-Clifton Road bridge crosses this segment of the river. In addition to this main road, there are several trails leading into this segment. A small picnic site is located near the bridge and receives some overnight use during the floating season. Two ranching headquarters are located along this portion of the river.

The road and other minor developments do not significantly affect the naturalness or other outstanding values of this area. Therefore, the Scenic classification best fits this segment.

Segment 2 (Gila River SE1/4 Sec. 26, T. 5 S., R. 29 E. to NE1/4 Sec.22, T. 6 S., R. 28 E.). Segment 2 includes a total of 15.20 miles, of which 0.25 miles cross private land. This segment includes 8,110.20 acres of public land and 360.00 acres of private land.

A Wild classification best describes this segment of the river. This area possess outstandingly remarkable scenic, recreation, geologic, fish and wildlife, historic and cultural values. Segment 2 is free of impoundments and generally inaccessible except by trails. The shoreline is largely primitive and undeveloped. The Wild classification is consistent with the current study of this area for wilderness potential.

Segment 3 (Gila River NE1/4 Sec. 22, T. 6 S., R. 28 E. to NE1/4 Sec.29 T. 6 S., R. 28 E.). Segment 3 includes a total of 4.00 miles. This segment includes 1,391.86 acres of public land and 5.00 acres of private land.

A Scenic classification best describes this segment of the river. This area possesses outstandingly remarkable scenic, recreation, geologic, and fish and wildlife values. Segment 3 is free-flowing and free from any impoundments. It includes a popular take out point at Bonita Creek for people floating the river and a picnic site at Spring Canyon. This segment is accessible in places by roads but the shoreline is largely primitive and undeveloped.

These developments and roads do not significantly affect the naturalness or other outstanding values of this area. Therefore, a Scenic classification best describes this segment of the river.

Segment 4 (San Francisco River SE1/4 Sec. 21 T. 5 S., R. 29 E., the confluence with the Gila River, to SW1/4 Sec. 14, T. 5 S., R.29E.). Segment 4 includes a total of 2.75 miles, of which 0.10 mile crosses private land. This segment includes 560.00 acres of public land and 280.00 acres of private land.

A Wild classification best describes this segment of the river. Segment 4 possesses outstandingly remarkable scenic, fish and wildlife and geologic values and is generally inaccessible except by trails. Trails and other developments do not affect the natural character of this segment. This segment is free from any impoundments and the shorelines are largely primitive. A Wild classification is consistent with the current study of this area for wilderness potential.

Segment 5 (San Francisco River SW1/4 Sec. 14, T. 5 S., R. 29 E. to NW1/4 Sec. 7, T. 5 S., R. 30 E.). Segment 5 includes a total of 4.95 miles, of which 1.75 miles crosses private land. This segment includes 1,250.19 acres of public land and 414.82 acres of private land.

A Recreational classification best describes this segment of the river. Segment 5 possesses outstandingly remarkable scenic, fish and wildlife, and geologic values. It is readily accessible by roads and has evidence of an old railroad grade. The area has also been impacted by other activities occurring along the shoreline. The waterway, however, remains natural and riverine in appearance.

5. Local/Regional Social/Economic Considerations

The Gila and San Francisco Rivers are located in Graham and Greenlee Counties. The 1980 census revealed a population of 11,406 people in Greenlee County and 22,862 people in Graham County. Population density for Greenlee County was 5.2 persons per square mile (psm) in 1988. Population projections indicate a county population of 9,100 by the year 2000. Population density for Graham County was 5.4 psm. The Graham County population is projected to be 26,300 by the year 2000. Still, the population density would be a low 5.7 psm.

The study area lies within a 20-mile radius of the Safford/Thatcher and Clifton/Morenci areas. Primary employment industries of the Safford/Thatcher area are agriculture, minerals, trades and services, and government. Livestock production and the production of irrigated crops (cotton, alfalfa, barley) are important. Trades and service sectors support the agricultural base. Safford serves as the Graham County seat and also has other government offices. It provides residences and services for the mining industry in the area. Eastern Arizona College (enrollment 3700) is located in Thatcher.

The primary employment industry for Clifton/Morenci is minerals. Trades and services and government are secondary. The copper industry and the Phelps Dodge Corporation dominate the economy of this area. Trades and services support the needs of the mining industry as well as tourists heading north along the Coronado Trail (US 666). Clifton is the county seat of Greenlee County and serves as the site of many government offices.

In Graham County, 60 percent of the income is related to the government, retail and service sectors. If the construction, mining and manufacturing sectors are added to the picture, 65 percent of the total income in the county is represented. In Greenlee County, 72 percent of the income is related to mining, manufacturing and government sectors.

Within the study area, livestock production is the only known source of employment and income. Designation of the river would not have an impact on this activity or any other potential employment in the area.

6. Impacts on Resources

The potential impacts on resources by designation of the rivers under the *Wild and Scenic Rivers Act* varies by the classification of the river segment as Wild, Scenic or Recreational. The impacts that could occur to other resources are discussed below.

Flood control and/or Storage Structures - Designation of the rivers would prohibit construction of any flood control or storage structures under all three classifications. The authorized Camelsback Dam was not analyzed in this study. Based upon information from the Bureau of Reclamation and the Corps of Engineers, BLM feels that this dam will not be built.

Livestock Grazing - All three classifications allow livestock grazing. Facilities and structures needed for the grazing operation would be permitted to a greater extent in the Recreational designation. Under a Wild or Scenic designation, facilities would need to be essentially primitive and compatible with the natural values of the viewshed. Very low impacts to livestock grazing are anticipated by any designation. Possible new projects may or may not be approved depending

on their impacts to the natural values being protected. This could cause minor impacts to the affected ranchers.

Energy and Minerals - Under the Wild classification, new mining claims and mineral leases are prohibited within 1/4 mile of the river. Valid existing rights would be recognized and other existing activity would be allowed to continue subject to regulation. Reasonable access will be permitted. Activity must be conducted in a manner that minimizes surface disturbances, sedimentation and visual impairments.

The Scenic and Recreational classification allows new mining claims and mineral leases and existing operations to continue subject to regulations and protection of river values. Activities must be conducted in a manner that minimizes surface disturbance, sedimentation, pollution and visual impairment.

The lands within the study area are classified as prospectively valuable for geothermal resources. Gillard Hot Springs, on the north bank of the Gila River, discharges some of the hottest water in the Southwest. A Wild classification would not allow development of geothermal resources. A Scenic or Recreational designation would not affect this activity.

Impacts of a river designation on mineral resources are not expected to be significant. Resource potential is considered to be low in the study area.

Recreation - A Wild classification would allow simple comfort and convenience facilities as necessary within the river area. Major public use areas, such as large campgrounds or administrative sites would be located outside the river area. Motorized travel is generally not compatible with this classification.

In a Scenic classification, large scale public use facilities, such as moderate size campgrounds, public information centers and administrative headquarters are allowed if such structures are screened from the river.

In a Recreational classification, campgrounds and picnic areas may be established in proximity to the river. Extensive recreation development is not required. Motorized travel on land or water may be permitted and will usually be governed by regulations applying to surrounding lands.

With the possible exception of off-highway vehicle use under a Wild designation, recreation now occurring along these rivers would not be precluded by designation under the *Wild and Scenic Rivers Act*. Most recreation uses may benefit from designation by protection of opportunities and natural values.

Other Resources - Other resources and programs including air, water, soils, vegetation, wildlife, fire management, as well as visual, cultural and paleontological resources, would not be adversely affected by designation. Many of these resources would benefit through the protection of natural values that a designation would bring.

7. Effects of Non-designation on Resources and River Values

Impacts to the outstanding values could occur if the study area is not included in the National Wild and Scenic River System. Development of geothermal resources could impact the natural values of the area. Increased vehicle use for mineral exploration or other activities could lead to impacts to riparian seedlings, disturbance of wildlife habitat and harassment of wildlife. Other impacts may occur to the soils, watershed, vegetation and cultural resources, but would be minor and localized.

8. Manageability Considerations

Manageability of the river varies by segment according to the differing situations found in each segment. These situations and conditions involve land ownership, nonconforming uses, protection afforded by designation and acquisition or easement needs.

Segment 1 is in public ownership with the exception of 80 acres of private land. Segment 1 is near Highway 666 and is accessible by a graded road. There appear to be no uses that are nonconforming with the Scenic classification of the segment. Designation of the river segment would afford protection of the free-flowing and outstandingly remarkable values that may not be protected otherwise. No acquisitions or easements are necessary for this segment of the river. This segment is manageable as a designated Scenic river under the Act.

Segment 2 is in public ownership except for 360 acres of private land. Segment 2 is generally inaccessible except by trail. Future manageability problems could arise from small amounts of OHV use occurring in this segment of the river. Motorized travel

is generally not compatible with a Wild classification. Designation of the river segment would afford protection of the free-flowing and outstandingly remarkable values that may not be protected otherwise. The 280 acre private parcel located at the mouth of Eagle Creek has been identified for acquisition. This is a popular camping spot for people floating the river and acquiring this parcel would ensure public use of this area in the future. Manageability of this segment as a Wild river may be adversely affected by OHV use.

Segment 3 is in public ownership with the exception of 5 acres of private land. This segment is accessible from a graded dirt road. There appear to be no uses that are nonconforming with the Scenic classification of the segment. Designation of the river segment would afford protection of free-flowing and outstandingly remarkable values that may not be protected otherwise. No acquisitions or easements have been identified for this segment. Overall, Segment 3 would be manageable as a Scenic river under the Act.

Segment 4 is in public ownership with the exception of 280 acres of private land. The segment is generally inaccessible except by trail. A small amount of OHV use is the only nonconforming use under the Wild classification. Designation of the river segment would afford protection of free- flowing and outstandingly remarkable values that may not be protected otherwise. No acquisition or easements are necessary for this segment of the river. Manageability of this segment as a Wild river may be adversely affected by OHV use.

Segment 5 is in public ownership with the exception of 415 acres of private land. Segment 5 is readily accessible by roads. There appear to be no uses that are nonconforming with the Recreational classification of the segment. Designation of the river segment would afford protection of the free-flowing and outstandingly remarkable values that may not be protected otherwise. No acquisitions or easements are necessary for this segment. This segment would be manageable as a Recreational river under the Act.

Formulation of Alternatives

Four alternatives for designation have been developed from the evaluation of the free-flowing and outstandingly remarkable values, classification process, analysis of the impacts on resources and manageability determinations of the five segments in the study area.

1. No Designation Alternative (No Action)

No acreage would be recommended for designation under the *Wild and Scenic Rivers Act* in the study area. Management of the area would be guided by the *Safford District Resource Management Plan.*

2. Partial Designation Alternative- Scenic and Recreational

About 2,801 acres of public land in Segment 1 and 1,392 acres of public land in Segment 3 would be designated as Recreational rivers. The length in Segment 1 would be 6.85 miles, with 5.95 flowing through public land. The length in Segment 3 would be 4.00 miles, all flowing through public land. There are also 240 acres of private land in Segment 1 and 5 acres of private land in Segment 3.

About 8,110 acres of public land in Segment 2 and 560 acres of public land in Segment 4 would be designated as Scenic rivers. The length in Segment 2 would be 15.20 miles, with 14.95 flowing through public land. The length in Segment 4 would be 2.75 miles, with 2.65 flowing through public land. There are also 360 acres of private land in Segment 2 and 280 acres of private land in Segment 4.

No acreage would be designated in Segment 5. Management of this segment would be guided by the *Safford District Resource Management Plan.*

3. Partial Designation Alternative- Scenic and Recreational

About 8,110 acres of public land in Segment 2 and 560 acres of public land in Segment 4 would be designated as Scenic rivers. The length in Segment 2 would be 15.20 miles, with 14.95 flowing through public land. The length in Segment 4 would be 2.75 miles, with 2.65 flowing through public land. There are also 360 acres of private land in Segment 2 and 280 acres of private land in Segment 4.

About 1,392 acres of public land in Segment 3 would be designated as a Recreational river. The length of the segment would be 4.00 miles, all flowing through public land. There are also 5.00 acres of private land in this segment.

No acreage would be designated under the Act in the remaining segments of the study area. Management of the area would be guided by the *Safford District Resource Management Plan.*

4. Total Designation Alternative- Wild, Scenic and Recreational

About 8,110 acres of public land in Segment 2 and 560 acres of public land in Segment 4 would be designated as Wild rivers. The length in Segment 2 would be 15.20 miles, with 14.95 flowing through public land. The length in Segment 4 would be 2.75 miles, with 2.65 flowing through public land. There are also 360 acres of private land in Segment 2 and 280 acres of private land in Segment 4.

About 2,801 acres of public land in Segment 1 and 1,392 acres of public land in Segment 3 would be designated as Scenic rivers. The length in Segment 1 would be 6.85 miles, with 5.95 flowing through public land. The length in Segment 3 would be 4.00 miles, all flowing through public land. There are also 240 acres of private land in Segment 1 and 5 acres of private land in Segment 3.

About 1,250 acres of public land in Segment 5 would be designated as a Recreational river. The length of the segment would be 4.95 miles, with 3.20 flowing through public land. There are also about 414 acres of private land in this segment.

Interim Management/ Protection Considerations

River values and characteristics of candidate river segments and study areas are protected by interim management considerations until studies and Congressional action have been completed. Once a river segment is determined eligible and the appropriate prospective classification determined (Wild, Scenic or Recreational), it must be afforded adequate interim protection until a final decision is reached. Management activities and authorized uses shall not be allowed to adversely affect either eligibility or prospective classification, subject to valid existing rights.

The free-flowing characteristics of identified river segments cannot be modified to allow stream impoundments, diversions, channelization and rip-rapping to the extent BLM is authorized under law. Subject to valid existing rights, outstandingly remarkable values of the segment or area must be protected and enhanced if possible. Management and development of the identified river and its corridor cannot be modified to the degree that its classification would be changed from Wild to Scenic, or from Scenic to Recreational.

APPENDIX 5

Gila River Coolidge Dam To Hayden/Winkelman Tailings Pond Segment

Introduction

The National Park Service completed the first nationwide inventory of significant free-flowing rivers in January 1982, in partial fulfillment of the requirements of the *Wild and Scenic Rivers Act* (Public Law 90-542). A 32-mile stretch of the Gila River from Coolidge Dam to the Hayden-Winkelman Tailings Pond was identified as eligible for study as a potential wild, scenic or recreational river.

Through this study report, eligibility is documented and classification is determined to formulate alternatives for designation of the river under the Act. Interim management and protection considerations for the study river are also outlined.

A determination of suitability provides the basis for recommending designation or nondesignation of a river segment or segments as part of the National Wild and Scenic Rivers System. All eligible segments of the river are evaluated for suitability in the RMP based on manageability considerations, impacts on resources, and social and economic considerations. Other factors considered include characteristics of the area, river values, land ownership and land use, potential uses, public interest, cost of needed land acquisition, valid existing rights, and other issues and concerns identified in the planning process.

Recommendations are forwarded through the Secretary of the Interior to Congress for their consideration. Only Congress can designate rivers for inclusion in the Wild and Scenic Rivers System.

Location/Description of Study Area

The stretch of river under study covers 32.0 miles from Coolidge Dam to the Hayden-Winkelman Tailings Pond in southeastern Arizona within Gila and Pinal Counties. The county line is the center of the river. The stretch of river to be studied is entirely within the Safford District, Bureau of Land Management.

A study area has been established along legal subdivisions and the San Carlos Apache Indian Reservation boundary to include, at a minimum, adjacent lands a quarter mile from the centerline of the river. Coolidge Dam, or the upper end of the study area, is located in SE1/4NW1/4 Sec. 17, T. 3 S., R. 18 E. The lower end of the study area at the Hayden-Winkelman Tailings Pond is in SE1/4 NW1/4 Sec. 23, T. 5 S., R. 15 E.

The reservation boundary is the centerline of the river for 20.0 miles of the study area beginning at river mile 0.5, below Coolidge Dam. Therefore, the south half of the river along that twenty-mile stretch in the San Carlos Indian Reservation is not included in the study area.

From the dam, the river cuts through the Mescal Mountains forming a deep and narrow gorge, then passes through the open terrain of the southern end of the Dripping Spring Valley and enters another canyon area as it flows through the southern Dripping Spring Mountains to Winkelman. The canyon in the Mescal Mountains contains several deeply incised and constricted passages including the Needle's Eye. Steeply dipping limestone forms much of the geology of the upper half of the study area while volcanic formations make up the study area's lower portion.

The elevation of the river below Coolidge Dam is about 2,320 feet above sea level and drops to about 1,910 feet near the tailings pond at the study area's lower end. The width of the river/flood plain varies from 60 feet to over 600 feet. Major tributaries entering the Gila River in the study area include Dick Spring Canyon, Mescal Creek, Dripping Spring Wash, the San Pedro River and from the San Carlos Apache Indian Reservation, Hawk Canyon, Deer Creek and Ash Creek.

Vegetation along the river banks and in the floodplain is dense riparian growth consisting of cottonwood, sycamore, ash, willow and mesquite trees. Years of controlled water releases including periods of low flow and lack of large natural floods due to the dam have created extremely thick growth along the river in the upper portion of the study area. In many places large trees are established in the river channel and low branches reach out into or stretch completely across the flow. At times these branches may be submerged by the flow. The channel in the lower half of the study area is also affected by the dense growth, though not so extensively. Out of the floodplain, desert shrub vegetation of saguaro, ocotillo, palo verde and other Sonoran species is predominant.

The climate of the area is characterized by hot summer days often exceeding 100 degrees, cool to mild days and cold nights in the winter and pleasant temperatures in the spring and fall. Precipitation averages 9 to 10 inches annually, coming mostly in summer thunderstorms.

A minimum of cultural development is found along the river in the study area. The upper portion of the study area is inaccessible by vehicle for much of its length. The river is paralleled by Highway 77 in the lower portion and passes through the towns of Winkelman and Hayden at the end of the study area.

The study area contains 8,515 acres of public, State, private and San Carlos Apache Indian Reservation land. Table 1 gives a statistical summary of acres and river miles in each land ownership category.

Table 1
Study Area Land Ownership

	Acres	River Miles	
Public Land	6,130	24.5	(19.1)*
State Land	700	1.4	(0.4)*
Private Land	1,505	5.6	(0.5)*
San Carlos Reservation	180	0.5	
TOTAL	8,515	32.0	(20.0)*

*miles in common with San Carlos Indian Reservation

Criteria Considered in Developing the Alternatives

The development of alternatives is based on a determination of eligibility; classification of the river segment as Wild, Scenic or Recreational; and consideration of social and economic effects, impacts on resources, and manageability of potential designations. The study is conducted through the *Safford District Resource Management Plan* (RMP) in response to issues and concerns identified in the planning process.

Planning criteria were established in the early stages of the RMP process to arrive at decisions to be made in the RMP. The criteria are: resource values; manageability of an area to preserve its resource values; existing wild and scenic river representation; current and potential land uses; effects of designation on other resources and uses; effects of non-designation on resource values; social and economic effects; public interest and attitudes; consistency of the designation with resource plans of other federal, State and local governments and Indian tribes; and consultation with federal, State and local agencies, the scientific community and individuals.

1. Evaluation of River Values

The entire stretch of the river has no impoundments or diversions. Straightening has not occurred along the river, though Highway 77 has a minor effect on some places where fill comes down to the river's edge. Otherwise, no rip-rapping has been done along the river.

Outstandingly remarkable scenic, geologic and fish and wildlife values are present in the study area. Visual resource evaluation of the upper portion of the area has resulted in an "A" rating (highest category) in Scenic Quality under the BLM's Visual Resource Management (VRM) system. The area is managed as VRM Class II with the objective of retaining the existing character of the landscape. The remaining portion of the river canyon is also highly scenic.

The study area's outstandingly remarkable geologic features include the steeply tilted limestone formations, the Needle's Eye and other deeply incised, narrow stretches of the river canyon. The effect of the river's downcutting over the centuries is also a remarkable feature. The presence of a flowing river in a desert environment is recognized and highly valued.

Outstandingly remarkable fish and wildlife values are associated with the study area. Bald eagles winter along the river in the upper section of the study area. Other federally listed threatened and endangered (T&E) and other uncommon animal species such as the peregrine falcon, snowy egret, black-crowned night heron, osprey, black hawk, zone-tailed hawk, northern beardless tyrannulet and Mississippi kite may occur here. Gila monster and, possibly, desert tortoise may be found in the study area.

2. Other River Values

The study area contains other notable values. Portions of the river receive recreation use for fishing, picnicking, camping and tubing. Some cultural resource values are present but little is known of the overall study area. The Gila River canyon is expected to contain significant cultural resource values.

Fish and wildlife other than those listed above also rely on the river for habitat. Warm-water fish such as channel catfish, flathead catfish, large-mouth bass, green sunfish and carp are found in the river. A large number of waterfowl occur along this stretch of the Gila River. Many species of both game and non game animals (mule deer, white-tailed deer, javelina, desert bighorn sheep, elk, mountain lion, bobcat, gray fox, ringtail, coati, dove and quail) may frequent the river and study area at different times.

The dense vegetation that has grown up along the river not only has riparian and wildlife habitat values, but has also proved invaluable in reducing flood severity and controlling erosion. The dense growth of trees and shrubs slows or impedes the velocity of large flows, thereby reducing the damage caused by flooding.

3. Eligibility Determination

To be eligible for inclusion under the *Wild and Scenic Rivers Act*, the segment of the river being studied must be 1) free flowing and 2) possess one or more outstandingly remarkable values. Taken from the Act, free flowing means ..."existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway." A river segment flowing between large impoundments will not necessarily be precluded from designation. Flows are considered sufficient if they sustain or complement the outstandingly remarkable values for which the river would be designated. Outstandingly remarkable values include scenic, recreation, geologic, fish and wildlife, historic, cultural or other similar values.

Determinations of the Nationwide Rivers Inventory found the Gila River from Coolidge Dam to the Hayden-Winkelman Tailings Pond to be free flowing and possess outstandingly remarkable values. Scenic, geologic and unspecified other values were identified at that time. The above Evaluation of River Values section also documents the study river's free flowing and outstandingly remarkable values. All 32 miles of the study river are eligible for further study under the Act.

4. Classification Determination

For the purposes of determining the potential classification of the Gila River in this study, five segments of differing characteristics have been identified. These segments are divided on the basis of obvious changes in land ownership, changes in river character and the presence of differing types and amounts of development.

Each of the segments identified below is classified according to the condition of the river and the adjacent lands as they exist at the time of the study. Each river segment and its immediate environment is considered as a unit. The potential classifications to be assigned as established in the *Wild and Scenic Rivers Act* are Wild, Scenic or Recreational.

As taken from the Act, the criteria for determining classification are:

Wild - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines and that may have undergone some impoundment or diversion in the past.

These criteria are further defined in the Federal Register at 47 FR 39457-8.

Classification of the segments also establishes a guideline for interim management (Section 4) until a designation or nondesignation decision is reached. Segment identification and classification determinations for each of the study segments are explained below.

Segment 1 begins at Coolidge Dam (SE1/4NW1/4 Sec. 17, T. 3 S., R. 18 E.) and ends at the reservation boundary where the river enters public land on the north. The segment is approximately 0.5 mile long and is entirely within the San Carlos Indian Reservation. About 180 acres of reservation land are contained in the study area of this segment.

The dam, powerplant, associated facilities and other developments have an obvious and significant effect in the Segment 1 study area. The area also has a switchback road leading down to the river and a bridge that provides access across the river to the south and east side. A gaging station is located at that point. Much of the river in this segment has been affected by operations of the dam. The discharge from the dam extends down the river a considerable percentage of the segment's distance. Earthen material has been removed from the canyon slopes leaving a visible scar. From the bottom of the switchback road, the road to the powerplant parallels the west bank of the river.

Segment 1 is classified as Recreational. The river is readily accessible by road. The entire length of the segment is paralleled by the road to the powerplant at the base of Coolidge Dam. Though some rip-rap and other modification of the shoreline is present, the waterway remains generally natural and riverine in appearance.

Segment 2 begins at the reservation boundary where it enters public land on the north and ends near a point where the river road turns away from the river southward toward the old Hook and Line Ranch headquarters (intersection of the river and the quarter-section line of Sec. 24, T. 3 S., R. 17 E.). The segment is about 5.0 miles long. Approximately 580 acres of public land on what is generally the north side of the river are contained in the segment study area.

A low grade dirt road follows the majority of the river's length entering the Segment 2 study area from the reservation, crossing a bridge and exiting the study area near its lower end, crossing another bridge back into the reservation. The Hawk Spring Road enters the study area about two-thirds of the way down the segment. A corral and hay shed are near the junction of the Hawk Spring Road with the river road. The river flowing through this area has retained its relatively natural character.

Segment 2 is classified as Recreational. The river is readily accessible by a low-grade dirt road that follows the river for most of the segment. Two bridge crossings exist in the segment. Another road intersects the river road about three miles down from the segment's beginning. A minor agricultural development, consisting of a corral and hayroof supporting a grazing operation, is near the river at that point.

Segment 3 begins near a point where the road on the reservation side turns away from the river southward toward the old Hook and Line Ranch headquarters (intersection of the river and the quarter section line of Sec. 24, T. 3 S., R. 17 E.) and ends near a road coming down a ridge from the north about 1.5 miles east of Dripping Spring Wash (intersection of the river and the west quarter quarter section line of Sec. 14, T. 4 S., R. 16 E.). Segment 3 is about 12.5 miles long. The segment study area contains about 2,630 acres of public land on the north side of the river.

A 44 kv powerline crosses about two miles of the Segment 3 study area and parallels the Gila River near the mouth of Mescal Creek. A road was bladed out to one of the towers some years ago but is no longer passable. The road never reached the river. A small corral in the canyon bottom and the remains of a mining prospect on the canyon slopes are the only other evidences of development. The shoreline and river flowing through this segment are essentially primitive in character and inaccessible except by trail.

Segment 3 is classified as Wild. The river is not accessible by road along this segment. The powerline crossing the segment study area is not easily noticeable and does little to detract from the natural character of the area. It was constructed in the 1920s with almost no vehicle access and its towers have taken on a rusty and non-metallic appearance that blends in with the surrounding landscape. The powerline passes through about two miles of the 12.5 mile long segment. Other developments do not affect the essentially primitive conditions. Waters of the river appear unpolluted, providing aesthetic qualities, habitat for the propagation of fish and wildlife and primary contact for recreation. The amount of livestock grazing occurring within the segment study area is limited and considered to have no effect on the primitive character of the area. Overall, the watershed and shorelines of the segment are essentially primitive.

Segment 4 begins near the end of a road coming down a ridge from the north about 1.5 miles east of Dripping Spring Wash (intersection of the river and the west quarter quarter section line of Sec. 14, T. 4 S., R. 16 E.) and ends where the river enters private property in the SW1/4 Sec. 7, T. 5 S., R.16E. Segment 4 is about 10.2 miles long. The segment contains about 2,650 acres of public land, 700 acres of State land and 335 acres of private land, totalling 3,685 acres. The private land occurs in three separate parcels with the river flowing through each one for a total of 2.0 miles. The river flows through State land in three separate stretches totalling 1.4 miles. The remaining 6.8 miles of river in this segment flows through public land.

Highway 77, a two-lane paved road, parallels the river along much of Segment 4. The river is accessible by vehicle from the highway in several places. Small lengths of three other low grade dirt roads enter the study area though only one reaches the river. Two undeveloped picnic and fishing sites maintained by BLM are adjacent to the river in the NW1/4 Sec. 28, T. 4 S., R. 16 E., and SW1/4 Sec. 5, T. 5 S., R. 16 E. Fill from the highway reaches the river's edge in some places but has not significantly affected the channel or the character of the river. The waterway remains generally natural in appearance.

Segment 4 is classified as Recreational. The river is readily accessible by road. Highway 77 parallels the river for about six miles of the 10.2 mile long segment. Several short side roads approach the shoreline from the highway. One other dirt road drops down to the river at the upper end of the segment. Some residential and agricultural development is present along the waterway on the private parcels in the segment study area. No impoundments or major diversion are known to have existed along the river. Some minor modification of the waterway has occurred from highway construction as fill reached the

shoreline in places. However, the waterway generally retains its natural and riverine appearance.

Segment 5 begins at the point the river enters private property in the SW1/4 Sec. 7, T. 5 S., R. 16 E. and ends south of the eastern edge of the Hayden-Winkelman Tailings Pond (intersection of the river and the west quarter quarter line Sec. 23, T. 5 S., R. 15 E.). The segment is about 3.8 miles long. The segment study area contains about 270 acres of public land and 1,170 acres of private land. The river flows through 0.2 mile of public land and 3.6 miles of private land.

Highway 77 follows the river in most of Segment 5. Portions of the town of Winkelman (residential and some business areas) and the adjacent copper mining operations are within the study area. The river and shoreline appear relatively natural through the segment.

Segment 5 is classified as Recreational. The river is readily accessible by road. Highway 77 parallels the river through nearly the entire segment. The highway bridges the river at Winkelman. There is residential and commercial development along the river in Winkelman and Hayden. No impoundments, diversions or other major modifications of the waterway exist. The waterway remains generally natural and riverine in appearance.

5. Local/Regional Social/Economic Considerations

The towns of Hayden and Winkelman, the city of Globe and the area in between are considered the local area that may be affected by designation of the Gila River under the *Wild and Scenic Rivers Act*. The larger regional area that could be affected is southeast Arizona.

Residents of Hayden/Winkelman and Globe are generally not supportive of protective designations on public lands. The main source of employment and income in the local area is the mining industry and related services which often conflict with protective designations. Designation of the river under the Act may bring increased recognition and more visitors to the area. Some economic benefits to the local area may result but the overall economic effect is not expected to be great.

Safety concerns have been expressed over recreation uses of the river due to past drownings and search and rescue incidents. Trees and shrubs growing in the river and the river's remoteness through the Mescal Mountains contribute to the its hazardous nature.

Local residents are strongly interested in outdoor recreation activities such as hunting, fishing, OHV use, camping and picnicking and generally less interested in primitive types of recreation. The remoteness of portions of the study river is also seen as making a designation unnecessary. Some local residents may favor protection of the river's recreational values. A river designation would not be expected to have significant effects on the social experiences or structure of the local area The social and economic impact of a river designation of all or a portion of the study river on the regional area would be minor.

6. Impacts on Resources

The potential impacts on resources by designation of the study river under the *Wild and Scenic Rivers Act* varies by the classification of the river segment as either Wild, Scenic or Recreational. As none of the river segments in this study have been classified Scenic, the impacts that could occur to resources under that designation will not be discussed below.

Mining and Energy - Under the Wild classification, new mining claims and mineral leases are prohibited within 1/4 mile of the river. Valid existing rights would be recognized and other existing activity would be allowed to continue subject to regulation. Reasonable access will be permitted. Activity must be conducted in a manner that minimizes surface disturbance, sedimentation and visual impairment.

The Recreational classification allows new mining claims and mineral leases and existing operations to continue subject to regulations and protection of river values. Activity must be conducted in a manner that minimizes surface disturbance, sedimentation, pollution and visual impairment.

The mineral and energy resources of the river study area are not fully known. However, the upper portion of the area was studied by the U.S. Geological Survey (USGS) and Bureau of Mines and reported in *Mineral Resources of the Needles Eye Wilderness Study Area, Gila County, Arizona* (1987). That report identified no mineral reserves or resources in the study area. An area of moderate potential for metals in vein or replacement deposits is located in the river study area in Secs. 35 and 36, T. 3 S., R. 16 E., and Secs. 1 and 2, T. 4 S., R. 16 E. The remainder of the upper portion of the river study area has a low mineral resource potential for metals, nonmetals and fuels.

The lower river study area passes through the Banner Mining District and by the Christmas Mine, a major copper producer. Other mines in the Banner District have produced gold, silver, lead, zinc, mercury and

tungsten. No mineral occurrences are known within the river study area but mineral potential could be considered moderate to high due to close association of the area with the mining district and past mineral production.

No structures favorable for the accumulation of oil and gas occur in the study area and no oil and gas leases or lease applications are existing. Though Mescal Warm Spring is near, no geothermal source is likely in the river study area.

Impacts of a river designation on mineral resources are not expected to be significant. Resource potential is considered to be low in the segment classified Wild and mining and mineral leasing can take place subject to some protective measures in the Recreational segments.

Lands and Realty, Water Supply, Hydroelectric Power and Flood Control - Four withdrawals are in the river study area. Executive Order 4549, withdrawn 12/06/1926, is for use of the San Carlos Irrigation Project. Power Site Reserve 758, withdrawn by executive order on 10/23/1924, also supports the San Carlos Irrigation Project and protects the proposed Porphyry, Needle's Eye and Christmas Reservoir sites. Water Power Designation 4 (AR-1), withdrawn 02/01/1917, and Power Site Reserve 590, withdrawn 03/21/1917, protect the Porphyry and Needle's Eye Reservoir sites.

USGS considers all three reservoir sites valuable for development of waterpower or water storage purposes. Each of the reservoirs could have the capacity to back water to Coolidge Dam.

The 44 kv transmission line crossing the study area was constructed in 1928 and is now authorized by a right-of-way. Upgrading the line to 69 kv has been planned by the San Carlos Irrigation Project for several years, but no work would be required in the study area. Inspection and maintenance of the line is generally done by helicopter.

Private and State lands are found within the river study area. Descriptions and acreages of these lands within each river segment are discussed in the Classification Determination section.

Designation of the river under a Wild classification would prohibit water supply dams, major diversions, hydroelectric power facilities and flood control works in the river corridor. New transmission lines are discouraged or should be restricted to existing rights-of-way.

In a Recreational classification, existing low dams, riprap, flood control works and other minor structures are allowed and may be maintained provided the waterway retains a generally natural appearance. Development of hydroelectric power facilities and new flood control structures is prohibited. New transmission lines are discouraged or should be restricted to existing rights-of-way.

A significant impact on the potential use of the above sites for water storage and power supply would result from designation of the river under the Act. The uses for which the withdrawals were intended could not be exercised. Designation would have no effect on the transmission line or plans to upgrade it. Current uses of State and private lands in the study area would not be affected.

Livestock Grazing - Both Wild and Recreational classifications allow domestic livestock grazing. Facilities and structures needed for the grazing operation would be permitted to a greater extent in the Recreational designation. Under a Wild designation, facilities would need to be essentially primitive and compatible with the natural values of the viewshed. No impacts to livestock grazing are anticipated by any designation of the river under the Act.

Recreation - A Wild classification would allow simple comfort and convenience facilities as necessary within the river area. Major public use areas, such as large campgrounds or administrative sites would be located outside the river area. Motorized travel is generally not compatible with this classification.

In a Recreational classification, campgrounds and picnic areas may be established close to the river. Extensive recreation development is not required. Motorized travel on land or water may be permitted and will usually be governed by regulations applying to surrounding lands.

Recreation now occurring along the river would not be precluded by a designation of the river under the *Wild and Scenic Rivers Act*. Most recreation uses may benefit from designation by protection of opportunities and natural values.

Other Resources - Other resources and programs including air, water, soils, vegetation, wildlife, fire management and visual, cultural and paleontological resources would not be adversely affected by designation of the river as either Wild or Recreational. Many of these resources would benefit through the protection of natural values that a designation would bring.

7. Effect of Non-designation on Resources and River Values

If the study river were not designated under the *Wild and Scenic Rivers Act*, the potential exists for development of sites for water power and storage purposes. The river's inundation by a reservoir would eliminate its free-flowing nature and adversely affect the outstandingly remarkable values identified earlier in the report. Other resource uses would benefit but the river would no longer be eligible as a Wild and Scenic River.

The likelihood of one of the above dams being built, however, is low. The withdrawals have been in effect for seventy years with no significant action toward building of the dams. As long as the dams are not built, the character of the river and its values will probably remain largely unchanged. Protection of a portion of the upper study river would result if Congress designates the Needle's Eye Wilderness as recommended in the *Safford District Final Wilderness Environmental Impact Statement* (BLM 1987).

8. Manageability Considerations

Manageability of the river varies by segment according to the differing situations found in each segment. These situations and conditions involve land status and ownership, nonconforming uses, protection afforded by designation and acquisition or easement needs.

Segment 1 is entirely within the San Carlos Indian Reservation. The San Carlos Tribe has not expressed an interest in seeing the river designated a part of the National Wild and Scenic River System and in providing for its management. The proximity of Coolidge Dam, powerplant and associated operations also has an effect downstream from the actual dam site that impinges on the quality of the natural riverine character that is a criteria for designation. Proposed work on repairing the dam may also effect the segment. The road along the river is the sole access to the bottom of the dam and may require upgrading for the construction. Public vehicle access is restricted by a locked gate on the road at the dam. Manageability of the segment as a designated river in the system is diminished by these conditions.

Segment 2 contains only one-half of the river and its corresponding shoreline. The other half of the river and shoreline is within the San Carlos Indian Reservation and therefore not part of the study area. The San Carlos Tribe has not expressed an interest in seeing that portion of the river designated for inclusion in the National Wild and Scenic River System and in providing for its management. Access to the segment is very limited, crossing the reservation on low grade dirt roads. A locked gate on the road at the dam restricts vehicle access to one unimproved road. Though the San Carlos Tribe sells a required travel permit for use of reservation roads, an easement granted for legal public access is unlikely. The land ownership and access situations seriously restrict manageability of the segment.

Segment 3 contains only one-half of the river and its corresponding shoreline. The San Carlos Indian Reservation has the other half of the river and shoreline. The San Carlos Tribe has not expressed an interest in studying that portion of the river for inclusion in the National Wild and Scenic River System and in providing for its management. Access to the upper end of the segment is through the reservation and therefore limited. An easement for legal public access to the upper end is unlikely to be granted by the Tribe. There are no uses along the river in the segment that are nonconforming with a Wild designation. The remoteness of the segment essentially protects many of the resource values present there except from the impacts of potential dams and reservoirs. A wilderness recommendation for the Needle's Eye, if enacted by Congress, would also protect most of the river in the segment. Manageability of the segment is adversely affected by the land ownership situation.

Segment 4 is largely public land with more than half of the river flowing through public land on both banks. Less than one quarter of the shoreline is shared with the San Carlos Indian Reservation in the segment. About one third of the segment flows through State and private land. The river is readily accessible from Highway 77 and some dirt roads. There appear to be no uses that are nonconforming with the Recreational classification of the segment. Designation of the river segment would afford protection of free-flowing and outstandingly remarkable values that may not be protected otherwise. Easements for legal public access through about 2.0 miles of private land may need to be acquired. Overall, the segment would be manageable as a designated Recreational river under the Act.

Segment 5 is almost all private land with only 0.2 mile of the river flowing through public land. Highway 77 parallels the river at the upper end and the lower end of the segment is in the towns of Winkelman and Hayden.

Development at the lower end is more extensive and apparent from the river than would be conforming with even the Recreational classification. A designation could protect some values of the river segment though

no plans for dams, dikes or major diversions are known to threaten the natural riverine appearance of the segment. Easement or acquisition costs for private lands in the segment could be prohibitive. Due to the overwhelming majority of private land, this segment is not manageable as a component of the National Wild and Scenic Rivers System.

Formulation of Alternatives

Through evaluation of the free-flowing and outstandingly remarkable values, classification, impacts on resources and manageability of the five segments of the Gila River from Coolidge Dam to the Hayden-Winkelman Tailings Pond, four alternatives for designation of the river under the *Wild and Scenic Rivers Act* have been developed. An alternative for no designation (no action), two alternatives for partial designation and a total designation alternative are considered below.

1. No Designation Alternative (No Action)

No acreage would be recommended for designation under the *Wild and Scenic Rivers Act* along the 32 mile stretch of the study river. Management of the area would be guided by the *Safford District Resource Management Plan* when it becomes final.

2. Partial Designation Alternative-Recreational

About 2,650 acres of public land in Segment 4 would be designated a Recreational river under the *Wild and Scenic Rivers Act*. The length of the segment designated would be 10.2 miles with 6.8 miles flowing through public land. About 700 acres of State land and 335 acres of private land are also in the segment.

No acreage would be designated under the Act in the remaining segments of the study river. Management of the area would be guided by the *Safford District Resource Management Plan* when it becomes final.

3. Partial Designation Alternative-Wild and Recreational

About 2,630 acres of public land in Segment 3 would be designated Wild and about 3,230 acres of public land in Segments 2 and 4 would be designated Recreational under the *Wild and Scenic Rivers Act*.

The length of the segment designated Wild would be 12.5 miles, all flowing through public land. No State or private lands are in the segment area. The length of the segments designated Recreational would be 15.2 miles. About 700 acres of State land and 335 acres of private land are in Segment 4.

No acreage would be designated under the Act in the remaining segments of the study river. Management of the area would be guided by the *Safford District Resource Management Plan* when it becomes final.

4. Total Designation Alternative-Recreational and Wild

About 6,130 acres of public land in all segments would be designated under the *Wild and Scenic Rivers Act*. Segments 1, 2, 4 and 5 would be designated Recreational and Segment 3 would be designated Wild. The Recreational designation would contain 700 acres of State land and 1,685 acres of private land. No State or private land would be included in the Wild designation. The Recreational designation would total 19.5 miles and the Wild designation would total 12.5 miles.

Interim Management/ Protection Considerations

River resource values and characteristics of candidate river segments and study areas are protected by interim management considerations until studies and Congressional action have been completed. Once a river segment is determined eligible and the appropriate prospective classification determined, it must be afforded adequate interim protection until a final decision is reached. Management activities and authorized uses shall not be allowed to adversely affect either eligibility or prospective classification, subject to valid existing rights.

The free-flowing characteristics of identified river segments cannot be modified to allow stream impoundments, diversions, channelization and rip-rapping to the extent BLM is authorized under law. Subject to valid existing rights, outstandingly remarkable values of the segment or area must be protected and enhanced if possible and management and development of the identified river and its corridor cannot be modified to the degree that its classification would be changed from wild to scenic, or from scenic to recreational.

Appendix 6

Management Objectives for Priority Species/Habitats

Management Objectives for Priority Species/Habitats- Alternatives A, B, and C

1. Riparian/Aquatic Habitat and Species Dependent on Riparian/ Aquatic Habitat

Riparian and aquatic habitat supports 60 percent of Arizona's wildlife species and 75 percent of species listed as threatened or endangered, yet they are one of the smallest communities comprising about 0.5 percent of the Safford District. Because wildlife and fishes are concentrated in these small areas, riparian and aquatic habitat management has been the focus of the Wildlife Program. Primary objectives are:

a. Maintain and improve riparian areas to achieve 75 percent in good ecological condition by 1997.

b. Increase the amount (length and width) of riparian vegetation to provide more wildlife habitat.

c. Increase the complexity (number of vegetative layers and plant species) of riparian communities for more niches and greater biological diversity.

d. Manage for three age classes (large decadent, mature and sapling) of riparian trees.

e. Manage for development of a complete shrub and grass/forb component.

f. Increase the duration and length of surface water flow in drainages.

g. Improve water quality.

h. Conduct inventories to document current use of riparian and aquatic habitats by fish and wildlife and to identify management needs or transplant opportunities.

i. Increase number of fish and amphibian populations by transplants, in conjunction with the Fish and Wildlife Service (FWS) and the Arizona Game and Fish Department (AGFD).

j. Monitor riparian and aquatic habitat to document conditions and response to management actions by vegetation, water conditions and animal use.

2. Species Identified for Reintroductions in Fish and Wildlife Service Plans

One of the primary tools available for wildlife management is tranplanting species from captive populations or areas where they are common to suitable habitat currently unoccupied or with a non-viable population. Such transplants are always done in conjunction with the AGFD, and with the FWS when a federally listed or candidate species is involved. Opportunities exist for many species (such as Gila topminnow, spikedace or wild turkey) that are currently present on public lands to be transplanted to suitable, unoccupied habitat elsewhere in the District. The management objective for these species is to increase the number of viable populations on public lands. Different problems exist for species totally extirpated from the District and special attention is focused on this group of fishes and wildlife.

Only two federal recovery plans specifically identify Safford District for reintroduction of extirpated species; woundfin minnow and the aplomado falcon. The *Endangered Species Act* mandates Bureau support and *Alternatives A and C* emphasize these species. Other extirpated species were present within the District, but their recovery plans do not identify public lands here for reintroductions. In *Alternative B*, BLM will shift management emphasis to support potential efforts to reintroduce all extirpated species. These species include grizzly bear, wolf, ocelot, jaguar, Colorado River squawfish and Mexican garter snake. Habitat management for game species would be deemphasized to free personnel and funding for these other species.

3. Desert Tortoise

BLM completed a rangewide management plan for desert tortoise in November 1988. The Bureau's goal is: "...to manage habitat so as to ensure that viable desert tortoise populations exist on public lands. This will be accomplished through cooperative resource management aimed at protecting the species and its habitat".

The District's first objective is to determine the distribution and relative population of desert tortoise on public lands. Then, based upon four criteria, 1) importance of the habitat to maintaining viable populations, 2)resolvability of conflicts, 3) tortoise density and 4) population status, specific management actions will be initiated. In view of the

relative health of the Sonoran Desert population of desert tortoise and the small, isolated parcels of suitable habitat managed, there may be few opportunities for enhancement of habitat in the Safford District. The District, however, will make every effort to protect and enhance viable desert tortoise populations on public lands.

4. Desert and Rocky Mountain Bighorn Sheep

Both Rocky Mountain and desert bighorn sheep utilize public lands within the Safford District. The Safford District currently supports, or has the potential to support five viable (125 sheep) populations. The management goal for desert bighorns is to manage habitat to support populations of sheep in all potential areas. Objectives include:

a. Support of Arizona Game and Fish Department reintroductions.

b. Develop water sources in suitable habitat.

c. Develop livestock and fire management systems compatible with sheep needs.

d. Mitigate other actions to prevent avoidable adverse impacts.

e. Conduct BLM inventories and support other inventory and monitoring efforts of bighorn sheep and their habitat.

Rocky Mountain bighorn sheep are currently using the northeast corner of the District and are rapidly increasing their range and numbers in the Eagle Creek area. Management objectives are to monitor the distribution and size of this population, especially in relation to the distribution of desert bighorns in the Peloncillo Mountains.

5. Mule Deer

Most public land in the Safford District supports mule deer, however little habitat contains high numbers. Arizona Game and Fish Department objectives are to increase deer numbers an average of 10 percent Statewide. Bureau objectives parallel those of the State. Specific management objectives are to:

a. Improve forage conditions through better livestock management and use of controlled burns.

b. Provide yearlong water at three-mile intervals in important habitat.

c. Block up federal lands to improve management efficiency and to support viable populations.

d. Mitigate avoidable adverse impacts by other programs and authorized actions.

e. Conduct BLM inventories and support other inventories and monitoring efforts of mule deer and their habitat.

6. Pronghorn Antelope

Public lands in the Safford District provide habitat for one population of pronghorn. AGFD strategin plans call of a 20 percent increase in numbers Statewide. District objectives are to improve habitat for the one herd so that it will support a viable population by:

a. Improving forage condition.

b. Providing water, where it is a limiting factor.

c. Reducing mortality factors, as identified.

d. Conducting or supporting monitoring or inventory efforts of pronghorn and their habitat.

Improved management techniques of desert grasslands may result in new areas with habitat suitable for pronghorn. Opportunities for transplants to produce new populations will be investigated and conducted in cooperation with AGFD, where warranted.

7. Oak Woodlands and Species Dependent on Oak Woodland Habitat

Oak woodlands provide crucial habitat for several priority wildlife species. Management efforts will benefit all these species and so the goals overlap. Priority species include white-tailed deer, Montezuma quail, wild turkey and black bear. AGFD strategic plan goals are to increase white-tailed deer 10 percent and maintain turkey and black bear numbers Statewide. Specific management objectives are:

a. Increase perennial grass height to provide better cover for white-tailed fawns, Montezuma quail and nesting turkeys.

b. Increase food quality and quantity for all wildlife species.

c. Reintroduce Merriam's and Gould's turkeys to areas with suitable habitat, in cooperation with AGFD.

d. Increase white-tailed deer numbers 10 percent through better livestock management and use of prescribed fire.

Bear and Montezuma quail numbers will benefit as habitat conditions improve, increasing in numbers and distribution.

8. Saguaro-Palo Verde

The eastern edge of the Sonoran desert lies in the Safford District. Where this community is dominated by saguaro cactus and palo verde shrubs, it is the most structurally and floristically diverse desert type in the world. Several priority species such as desert tortoise and javelina key into this community. Other wildlife of possible future concern, such as Harris hawks and purple martins, also concentrate here. Management objectives are to:

a. Maintain this community in good or better ecological condition.

b. Mitigate disturbances to prevent avoidable adverse impacts.

c. Control fire to prevent loss of this fire-sensitive community.

d. Block up the land ownership pattern to acquire management units.

9. Desert Grassland

Desert grasslands in the Safford District include Sonoran desert, Chihuahuan desert and plains grassland types. All are fire dependent communities. Historic management methods resulted in shrub, cactus and juniper invasion at the expense of perennial grasses. Priority species such as pronghorn, bighorn sheep and the extirpated aplomado falcon; plus other species of growing concern such as Cassin's sparrows, Brewer's sparrows and the massasaga are adversely affected as grass dominance declines. Currently 13 grassland dependent wildlife species are included in the list of State threatened species.

The management objective of the Safford District is to reduce the invading shrubs, cactus and junipers and increase native perennial grasses in the most productive portions of the public lands. Methods will include changes in livestock and fire management practices. Benefits to riparian and aquatic areas will also occur due to improved watershed conditions. Some changes in distribution and local populations of species that prefer shrublands, such as javelina, may occur as this objective is attained.

10. Wetlands

Riparian and aquatic habitat is very important to most of the District's wildlife. Wetlands, as a type of riparian community characterized by saturated soil at the land/water junction, are especially crucial to waterfowl, shorebirds and amphibians. Currently there are only an estimated 100-200 acres of wetlands in the District. Previous planning efforts have identified the need for additional wetlands. In *Alternative B* wetland habitat would be separated from the riparian and aquatic topic to give it special emphasis. Management objectives are to:

a. Prevent avoidable disturbances to improve existing wetlands.

b. Construct low dams, water diversions and water spreading projects to develop additional wetlands.

c. Acquire additional wetlands from willing owners and develop as necessary.

d. Acquire water rights to insure continued supply.

11. Other Species and Habitats of Interest

Many wide-ranging species must be managed by Districtwide practices and policies. Bureau policy, NEPA and the *Endangered Species Act* provide general guidance for management and mitigation. Consultation with AGFD and the FWS provides additional support. The District's goal is to protect and enhance habitat for all priority species on public lands. All actions will be evaluated for possible effects to wildlife and AGFD or FWS will be consulted where applicable. Site-specific habitat improvements will be identified in activity plans and adverse impacts will be mitigated in individual actions or plans as proposed.

Appendix 7

Lands That Meet FLPMA Requirements for Sale

Lands That Meet FLPMA Requirements for Sale - Alternatives A, B, and C

The following public lands qualify for sale under Section 203(a)(1) of FLPMA. The tracts are difficult and uneconomic to manage because of their location or other characteristics. Although they qualify for sale, the order of preference for their disposal is by exchange, R&PP lease/patent or sale.

These parcels identified for disposal are not to be considered all inclusive. Unforeseen future land management concerns or public demand may necessitate the need for other public lands in retention areas to be sold or exchanged. The parcels considered at that time will be subject to the same BLM planning process and *National Environmental Policy Act* as those identified in this document.

Gila and Salt River Meridian, Arizona	Land for Sale Under Alternatives: A	B	C
T. 2 S., R. 14 E.,			
Sec. 7, NE1/4NE1/4 excluding mineral patent;	X	X	X
Sec. 31, lots 1 and 2, NE1/4NW1/4.	X	X	X
T. 2 S., R. 15 E.,			
Sec. 20, lot 1, S1/2NE1/4, N1/2SE1/4, SE1/4SE1/4, unpatented mineral survey;	X	X	X
Sec. 29, lots 5, 9, 10-13 incl., E1/2NE1/4, N1/2SE1/4, unpatented mineral survey in N1/2 and W1/2;	X	X	X
Sec. 31, NE1/4, N1/2SE1/4.	X	X	X
T. 3 S., R. 29 E.,			
Remaining public land in:			
Sec. 32	X	X	X
Sec. 35	X	X	X
Sec. 36.	X	X	X
T. 4 S., R. 28 E.,			
Remaining public land in:			
Sec. 12, E1/2NE1/4 (within)	X	X	X
T. 4 S., R. 29 E.,			
Remaining public land in:			
Sec. 1	X	X	X
Sec. 2	X	X	X
Sec. 3	X	X	X
Sec. 4	X	X	X
Sec. 6, S1/2S1/2 (within);	X	X	X
Sec. 7	X	X	X
Sec. 8	X	X	X
Sec. 10	X	X	X
Sec. 11	X	X	X
Sec. 12	X	X	X
Sec. 18	X	X	X
Sec. 29, NE1/4NW1/4 (within).	X	X	X
T. 5 S., R. 23 E.,			
Sec. 9, NE1/4NE1/4;	X	X	X
Sec. 11, E1/2NW1/4, NW1/4SW1/4;	X	X	X
Sec. 13, W1/2SW1/4SW1/4, SE1/4SW1/4SW1/4.	X	-	X
T. 6 S., R. 16 E.,			
Sec. 17, W1/2SW1/4;	X	-	X
Sec. 27, unlotted parcel in SE1/4NW1/4.	X	X	X
T. 6 S., R. 17 E.,			
Sec. 7, south of San Carlos bdy.;	X	X	X
Sec. 8, south of San Carlos bdy.	X	X	X
T. 6 S., R. 22 E.,			
Sec. 26, all south of San Carlos byd.	X	X	X
T. 6 S., R. 24 E.,			
Sec. 9, E1/2SW1/4.	X	-	X

APPENDIX 7

Gila and Salt River Meridian, Arizona	Land for Sale Under Alternatives: A	B	C
T. 6 S., R. 25 E.,			
Sec. 8, S1/2NE1/4SE1/4;	X	X	X
Sec. 22, SE1/4NE1/4;	X	X	X
Sec. 25, SW1/4SW1/4NW1/4;	X	X	X
Sec. 26, N1/2NW1/4NE1/4, E1/2SW1/4NW1/4NE1/4, SE1/4NW1/4NE1/4.	X	X	X
T. 6 S., R. 30 E.,			
Sec. 1, lots 14, 18, 22;	X	X	X
Sec. 14, SW1/4NE1/4.	X	X	X
T. 7 S., R. 16 E.,			
Sec. 10, lot 7, SE1/4SE1/4;	X	-	X
Sec. 11, S1/2S1/2;	X	-	X
Sec. 12, S1/2SW1/4;	X	-	X
Sec. 13, N1/2NW1/4, E1/2SE1/4NW1/4;	X	-	X
Sec. 14, N1/2N1/2, W1/2SW1/4NW1/4;	X	-	X
Sec. 15, lot 12, NE1/4NE1/4.	X	-	X
T. 7 S., R. 25 E.,			
Sec. 8, NE1/4SW1/4.	X	-	X
T. 7 S., R. 27 E.,			
Sec. 4, lots 1-5 incl., S1/2N1/2, SW1/4;	X	X	X
Sec. 7, lots 1 and 2, NE1/4, E1/2NW1/4;	X	X	X
Sec. 8, lots 1, 2, 3, NW1/4, N1/2SW1/4;	X	X	X
Sec. 9, lots 14-19 incl.;	X	X	X
Sec. 14, NW1/4;	X	X	X
Sec. 21, N1/2SW1/4NE1/4.	X	X	X
T. 7 S., R. 31 E.,			
Sec. 34, E1/2NE1/4SE1/4, W1/2NE1/4SE1/4;	X	X	X
Sec. 35, NW1/4NW1/4SW1/4.	X	X	X
T. 8 S., R. 16 E.,			
Sec. 1, lot 1;	X	-	X
Sec. 21, NW1/4;	X	X	X
Sec. 24, E1/2NE1/4;	X	-	X
Sec. 29, SE1/4SW1/4.	X	X	X
T. 8 S., R. 17 E.,			
Sec. 19, E1/2SW1/4 (R&PP).	X	X	X
T. 8 S., R. 18 E.,			
Sec. 22, SW1/4NE1/4, SW1/4NW1/4.	X	X	X
T. 8 S., R. 26 E.,			
Sec. 20, lots 1 and 2;	X	X	X
Sec. 21, E1/2NE1/4NE1/4;	X	X	X
Sec. 29, lots 19, 20, 21, N1/2NW1/4NE1/4, W1/2E1/2NW1/4.	X	X	X
T. 8 S., R. 31 E.,			
Sec. 11, E1/2NE1/4, NE1/4SE1/4;	X	X	X
Sec. 35, E1/2E1/2.	X	X	X
T. 8 S., R. 32 E.,			
Sec. 9, E1/2SE1/4;	X	X	X
Sec. 10, W1/2SW1/4;	X	X	X
Sec. 30, W1/2NW1/4SE1/4.	X	X	X
T. 12 S., R. 29 E.,			
Sec. 29, SE1/4SW1/4.	X	X	X
T. 13 S., R. 19 E.,			
Sec. 30, lots 3 and 4.	X	X	X
T. 13 S., R. 30 E.,			
Sec. 26, E1/2NE1/4SE1/4, N1/2SE1/4SE1/4, SW1/4SE1/4SE1/4, W1/2SE1/4SE1/4SE1/4;	X	X	X
Sec. 35, SE1/4.	X	-	X
T. 13 S., R. 31 E.,			
Sec. 20, SW1/4SW1/4;	X	-	X
Sec. 29, W1/2NW1/4, NW1/4SW1/4;	X	-	X
Sec. 31, lot 2.	X	X	X

LANDS MEETING REQUIREMENTS FOR SALE

Gila and Salt River Meridian, Arizona	Land for Sale Under Alternatives: A	B	C
T. 14 S., R. 30 E.,			
Sec. 1, S1/2;	-	-	X
Sec. 11, E1/2SE1/4;	X	X	X
Sec. 13, NE1/4.	X	-	X
T. 14 S., R. 31 E.,			
Sec. 4, SW1/4SW1/4,	-	-	X
E1/2SE1/4;	-	X	-
Sec. 5, SE1/4SE1/4;	-	-	X
Sec. 6, lot 6, NE1/4SW1/4;	-	-	X
Sec. 8, NE1/4NE1/4, NW1/4, E1/2SW1/4, W1/2SE1/4;	-	-	X
Sec. 9, N1/2NW1/4;	-	-	X
Sec. 17, NE1/4, SW1/4, SE1/4;	-	-	X
Sec. 18, S1/2SE1/4;	-	-	X
Sec. 19, SE1/4;	-	-	X
Sec. 20, S1/2S1/2;	-	-	X
Sec. 21, NE1/4, SE1/4;	-	-	X
Sec. 22, NW1/4;	-	-	X
Sec. 23, SW1/4NE1/4, W1/2SE1/4.	-	-	X
T. 14 S., R. 32 E.,			
Sec. 19, lot 4.	X	X	X
T. 15 S., R. 27 E.,			
Sec. 3, SW1/4NW1/4, N1/2SW1/4;	X	X	X
Sec. 11, SW1/4NE1/4.	X	X	X
T. 15 S., R. 28 E.,			
Sec. 4, W1/2NE1/4SW1/4.	X	X	X
T. 16 S., R. 22 E.,			
Sec. 1, S1/2SW1/4, SW1/4SE1/4 excluding mineral patent;	X	-	X
Sec. 2, lots 12, 13, 14 excluding mineral patent, NW1/4NW1/4NW1/4 excluding mineral patent;	X	-	X
Sec. 3, lots 5, 8, 9, 10, 14-18 incl.;	X	-	X
Sec. 4, lot 5, N1/2SE1/4, SW1/4SE1/4;	X	-	X
Sec. 6, lots 3-7 incl., SE1/4NW1/4, E1/2SW1/4;	-	-	X
Sec. 8, N1/2SW1/4, SW1/4SW1/4, NW1/4SE1/4;	X	-	X
Sec. 9, SW1/4SW1/4;	X	-	X
Sec. 10, lots 1 and 2, SW1/4NE1/4, NW1/4SW1/4;	X	-	X
Sec. 12, NE1/4SE1/4, S1/2SE1/4 excluding mineral patent;	-	-	X
Sec. 13, lot 7, N1/2NE1/4, NE1/4NW1/4 excluding mineral patent;	X	-	X
Sec. 17, SW1/4NE1/4, SE1/4NW1/4, SE1/4;	X	-	X
Sec. 18, lot 4, N1/2SE1/4, SE1/4SE1/4;	X	-	X
Sec. 21, W1/2NW1/4;	X	-	X
Sec. 22, MS 2356;	X	-	X
Sec. 23, lot 5, MS 2356;	X	-	X
Sec. 24, lots 4-7 incl.	X	-	X
T. 16 S., R. 23 E.,			
Sec. 4, SE1/4NW1/4, NE1/4SW1/4;	X	-	X
Sec. 6, lots 7 and 8;	X	-	X
Sec. 23, lot 2, W1/2NE1/4, S1/2, MS 585, unpatented mineral surveys;	-	-	X
Sec. 24, MS 586.	X	-	X
T. 16 S., R. 27 E.,			
Sec. 30, SE1/4SE1/4;	X	X	X
Sec. 31, NE1/4NE1/4;	X	X	X
Sec. 34, SE1/4NE1/4, NE1/4SE1/4.	X	X	X
T. 16 S., R. 30 E.,			
Sec. 14, SW1/4NE1/4.	X	-	X
T. 17 S., R. 31 E.,			
Sec. 5, SE1/4SE1/4.	X	-	X
T. 17 S., R. 32 E.,			
Sec. 6, lot 2.	X	-	X
T. 18 S., R. 25 E.,			
Sec. 1, lots 1 and 2, S1/2NE1/4, N1/2SW1/4, SE1/4SW1/4, SE1/4, excluding mineral patent;	-	-	X

APPENDIX 7

Gila and Salt River Meridian, Arizona	Land for Sale Under Alternatives: A	B	C
Sec. 4, lot 4;	X	X	X
Sec. 5, lots 1, 10, 11;	X	X	X
Sec. 6, lots 6-10 incl., N1/2SE1/4, NE1/4SW1/4;	-	-	X
Sec. 7, lots 1 and 2, E1/2NW1/4.	-	-	X
T. 19 S., R. 22 E.,			
Sec. 26, NW1/4SW1/4;	X	X	X
Sec. 34, SE1/4SE1/4SW1/4NE1/4, S1/2NW1/4SE1/4NE1/4, E1/2SE1/4NE1/4, N1/2SW1/4SE1/4NE1/4, SW1/4SW1/4SE1/4NE1/4, SE1/4SW1/4SE1/4NE1/4, NW1/4NW1/4NE1/4SE1/4, NE1/4NE1/4NW1/4SE1/4.	X	X	X
T. 19 S., R. 24 E.,			
Sec. 4, lot 4;	X	X	X
Sec. 9, SW1/4NE1/4, NE1/4SE1/4;	X	X	X
Sec. 12, lots 1, 2, 3;	X	X	X
Sec. 13, lots 1-9 incl.;	X	X	X
Sec. 14, lot 2, MS 2738;	X	X	X
Sec. 26, SW1/4.	-	-	X
T. 19 S., R. 25 E.,			
Sec. 4, S1/2NE1/4, SE1/4;	-	-	X
Sec. 9, NW1/4NE1/4, NE1/4NW1/4;	-	-	X
Sec. 17, lots 1, 3, 9-15 incl., 17, 18;	-	-	X
Sec. 18, N1/2SE1/4NE1/4;	-	-	X
Sec. 20, lots 1-8 incl., SW1/4NW1/4, W1/2SW1/4, unpatented mineral survey;	-	-	X
Sec. 21, lots 1-8 incl. excluding mineral patent, E1/2SE1/4 excluding mineral patent.	-	-	X
T. 19 S., R. 27 E.,			
Sec. 17, SW1/4SW1/4.	X	-	X
T. 19 S., R. 28 E.,			
Sec. 4, lot 4.	X	-	X
T. 20 S., R. 26 E.,			
Sec. 6, lots 10-13 incl.	-	-	X
T. 21 S., R. 22 E.,			
Sec. 3, lot 3.	X	X	X
T. 21 S., R. 23 E.,			
Sec. 7, SE1/4SE1/4;	X	X	X
Sec. 8, NW1/4NW1/4.	X	X	X
T. 22 S., R. 21 E.,			
Sec. 15, SE1/4NE1/4;	X	X	X
Sec. 20, E1/2NW1/4.	X	X	X
T. 22 S., R. 23 E.,			
Sec. 4, SW1/4SE1/4.	X	X	X
T. 22 S., R. 26 E.,			
Sec. 8, SW1/4SE1/4;	X	X	X
Sec. 19, SE1/4NE1/4, E1/2SE1/4.	X	X	X
T. 22 S., R. 28 E.,			
Sec. 23, SW1/4NW1/4;	X	-	X
Sec. 30, lot 5;	X	-	X
Sec. 34, S1/2S1/2.	-	-	X
T. 22 S., R. 29 E.,			
Sec. 15, W1/2E1/2, E1/2SW1/4;	-	-	X
Sec. 24, NW1/4NE1/4;	X	-	X
Sec. 31, SE1/4SE1/4.	X	-	X
T. 23 S., R. 23 E.,			
Sec. 8, lot 2;	X	X	X
Sec. 9, lot 5;	X	X	X
Sec. 28, SE1/4NE1/4.	X	X	X
T. 23 S., R. 25 E.,			
Sec. 4, NW1/4SW1/4;	X	X	X
Sec. 5, NE1/4SE1/4;	X	X	X
Sec. 10, SE1/4NE1/4.	X	X	X

LANDS MEETING REQUIREMENTS FOR SALE

Gila and Salt River Meridian, Arizona	Land for Sale Under Alternatives: A	B	C
T. 23 S., R. 27 E.,			
Sec. 28, NW1/4SW1/4.	X	X	X
T. 23 S., R. 28 E.,			
Sec. 3, lots 1, 2, 4, SW1/4NW1/4, NW1/4SW1/4;	-	-	X
Sec. 10, SE1/4NE1/4;	X	X	X
Sec. 11, N1/2NW1/4.	X	X	X
T. 24 S., R. 25 E.,			
Sec. 1, E1/2NE1/4SE1/4, NE1/4SE1/4SE1/4;	X	X	X
Sec. 12, SE1/4NE1/4NE1/4, NW1/4NE1/4NE1/4;	X	X	X
Sec. 14, lots 1, 2, 3;	X	X	X
Sec. 22, lots 1-4 incl.;	X	X	X
Sec. 23, lots 2, 3, 4;	X	X	X
Sec. 24, lots 1, 2.	X	X	X
T. 24 S., R. 26 E.,			
Sec. 19, lots 1-4 incl.;	X	X	X
Sec. 24, lots 1-4 incl.	X	X	X
T. 24 S., R. 28 E.,			
Sec. 11, SE1/4NE1/4, N1/2NW1/4NW1/4, W1/2SW1/4;	X	X	X
Sec. 13, E1/2NW1/4;	X	X	X
Sec. 22, lots 1-4 incl.;	X	X	X
Sec. 23, lots 1-4 incl.;	X	X	X
Sec. 24, lots 1-4 incl.	X	X	X
T. 24 S., R. 29 E.,			
Sec. 1, SW1/4NE1/4;	X	X	X
Sec. 5, SE1/4SW1/4, SE1/4SE1/4;	X	X	X
Sec. 6, E1/2NE1/4;	X	X	X
Sec. 19, lots 1-5 incl.	X	X	X
T. 24 S., R. 30 E.,			
Sec. 19, lot 1;	X	X	X
Sec. 20, lots 1-4 incl.	X	X	X
Approximate Acres by Alternative	12,010	8,683	18,123

Appendix 8

Visual Resource Management Class Objectives

Visual Resource Management Class Objectives

Bureau Manual 8410, Visual Resource Inventory (BLM 1986), places the management of visual resources (scenery) into four management classes.

Class I - The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; it does not, however, preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II - The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.

Class III - The objective of this class is to partially retain the existing character of the landscape. The level of activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV - The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. Every attempt should be made, however, to minimize the impact of these activities through careful location, minimal disturbance and repeating the basic elements.

Appendix 9

Legal Description for Lands Proposed for Mineral Withdrawal

Legal Description for Lands Proposed for Mineral Withdrawal

The following lands are proposed for withdrawal from mineral entry under the *Mining Law of 1872*.

Alternative A

Gila and Salt River Meridian, Arizona

1. Black Rock RNA ACEC - 189 acres

T. 5 S., R. 21 E.,
Sec. 34, S1/2SE1/4SW1/4.

T. 6 S., R. 21 E.,
Sec. 3, lots 1-3, S1/2NE1/4, SE1/4NW1/4.

2. Bonita Creek ACEC - 2,467 acres

T. 4 S., R. 27 E.,
Sec. 27, lots 1 and 2;
Sec. 34, W1/2NE1/4, E1/2SE1/4NW1/4, E1/2SW1/4, W1/2SE1/4.

T. 5 S., R.27 E.,
Sec. 3, lot 6, W1/2SW1/4NE1/4, E1/2SE1/4SW1/4, SW1/4SE1/4;
Sec. 10, N1/2NE1/4, NW1/4SE1/4;
Sec. 11, W1/2E1/2NW1/4, W1/2NW1/4, W1/2E1/2SW1/4, SW1/4SW1/4;
Sec. 14, W1/2SW1/4NE1/4, E1/2NW1/4, E1/2E1/2SW1/4, W1/2W1/2SE1/4;
Sec. 23, W1/2NW1/4NE1/4, SW1/4NE1/4, E1/2NE1/4NW1/4, NE1/4SE1/4NW1/4, W1/2SE1/4, SW1/4SE1/4SE1/4;
Sec. 25, W1/2NW1/4SW1/4, SW1/4SW1/4;
Sec. 26, W1/2NE1/4NE1/4, E1/2W1/2NE1/4, SE1/4NE1/4, NE1/4SE1/4, E1/2SE1/4SE1/4;
Sec. 36, SW1/4NE1/4, S1/2NE1/4NW1/4, NW1/4NW1/4, N1/2SW1/4NW1/4, SE1/4NW1/4, NE1/4SE1/4, E1/2NW1/4SE1/4, N1/2SE1/4SE1/4.

T. 5 S., R. 28 E.,
Sec. 31, lots 5-7, SW1/4SW1/4SW1/4, S1/2SE1/4SW1/4.

T. 6 S., R. 28 E.,
Sec. 5, lots 5 and 6, SW1/4NE1/4, S1/2NW1/4, W1/2SE1/4;
Sec. 6, lot 8;
Sec. 8, NE1/4NE1/4, E1/2NW1/4NE1/4, NW1/4NW1/4NE1/4, E1/2SE1/4NE1/4;
Sec. 9, S1/2NW1/4NW1/4, SW1/4NW1/4, W1/2SW1/4;
Sec. 16, W1/2SE1/4NW1/4, W1/2NW1/4, NE1/4SE1/4, E1/2SW1/4SE1/4, SW1/4SE1/4;
Sec. 21, NW1/4NE1/4, E1/2SW1/4NE1/4, W1/2SE1/4NE1/4, NE1/4SE1/4.

3. Gila Box ONA ACEC - 12,874 acres

T. 5 S., R. 28 E.,
Sec. 25, SE1/4SE1/4;
Sec. 36, lots 1 and 2, NE1/4, W1/2SE1/4, SE1/4SW1/4.

T. 5 S., R. 29 E.,
Sec. 15, SE1/4;
Sec. 20, S1/2S1/2;
Sec. 21, E1/2, SW1/4;
Sec. 22, all;
Sec. 25, lots 5-16 incl., SE1/4SW1/4, N1/2SW1/4, S1/2NW1/4;
Sec. 26, N1/2, SW1/4SE1/4, SW1/4;
Sec. 27, N1/2, N1/2S1/2, SE1/4SE1/4;
Sec. 28, N1/2, NE1/4SE1/4, NW1/4SW1/4;
Sec. 29, NE1/4, N1/2SE1/4, SW1/4, S1/2NW1/4;
Sec. 30, NE1/4, E1/2SE1/4;
Sec. 31, NE1/4NE1/4, S1/2NE1/4, N1/2SE1/4, SW1/4SE1/4, W1/2;
Sec. 32, N1/2NW1/4;
Sec. 34, NE1/4NE1/4;
Sec. 35, N1/2N1/2, SW1/4NE1/4, S1/2NW1/4;
Sec. 36, lots 1-4 incl., N1/2NW1/4.

T. 5 S., R. 30 E.,
Sec. 30, lots 3 and 4, SW1/4SE1/4, E1/2SW1/4;
Sec. 31, lots 5, 6, 9-11, 15, 16, 18, 19, E1/2, SE1/4SW1/4;
Sec. 32, SE1/4SE1/4, W1/2SE1/4, W1/2.

T. 6 S., R. 28 E.,
Sec. 1, lots 1-4 incl., S1/2N1/2, S1/2;
Sec. 2, lot 1, S1/2N1/2, S1/2;
Sec. 3, SE1/4SE1/4;
Sec. 10, E1/2;
Sec. 11, all;
Sec. 12, N1/2, NW1/4SE1/4, N1/2SW1/4;
Sec. 14, N1/2NE1/4, W1/2;
Sec. 15, E1/2E1/2;
Sec. 20, S1/2SE1/4;
Sec. 21, SE1/4NE1/4, E1/2SE1/4, SW1/4SW1/4;
Sec. 22, NE1/4, NW1/4SE1/4, NE1/4SW1/4, W1/2SW1/4, S1/2NW1/4, NE1/4NW1/4;
Sec. 23, N1/2NW1/4, SW1/4NW1/4;
Sec. 27, W1/2NW1/4;
Sec. 28, N1/2, N1/2SE1/4;
Sec. 29, lots 1 and 2, NE1/4, E1/2NW1/4.

T. 6 S., R. 29 E.,
Sec. 6, lots 1-7 incl., S1/2NE1/4, W1/2SE1/4, E1/2SW1/4, SE1/4NW1/4;
Sec. 7, lots 1 and 2, E1/2NW1/4.

T. 6 S., R. 30 E.,
Sec. 3, lots 9-12 incl., S1/2NW1/4;
Sec. 4, lots 1 and 8-15 incl., S1/2NW1/4;
Sec. 5, lot 1.

4. Table Mountain RNA ACEC - 1,220 acres

T. 7 S., R. 18 E.,
Sec. 9, S1/2SW1/4SW1/4;
Sec. 15, SW1/4;
Sec. 16, all;
Sec. 17, E1/2NE1/4;
Sec. 22, W1/2.

5. Desert Grasslands RNA ACEC - 380 acres

T. 3 S., R. 16 E.,
Sec. 16, lots 1-4 incl., S1/2S1/2;
Sec. 21, N1/2NE1/4;
Sec. 22, N1/2NW1/4.

6. Dry Spring RNA ACEC - 825 acres

T. 3 S., R. 17 E.,
Sec. 20, E1/2SE1/4;
Sec. 27, W1/2W1/2 north of the Gila River;
Sec. 28, all north of the Gila River;
Sec. 29, E1/2NE1/4 north of the Gila River, E1/2W1/2NE1/4 north of the Gila River.

7. Bear Springs Badlands ACEC - 2,927 acres

T. 6 S., R. 23 E.,
Sec. 26, SW1/4SW1/4;
Sec. 27, S1/2NE1/4, S1/2;
Sec. 34, lots 3 and 4, NW1/4, N1/2SW1/4.

T. 7 S., R. 23 E.,
Sec. 1, SW1/4SW1/4, SE1/4SE1/4;
Sec. 2, S1/2;
Sec. 3, lots 3 and 4, S1/2NW1/4, S1/2;
Sec. 4, S1/2;
Sec. 10, N1/2;
Sec. 11, N1/2;
Sec. 12, N1/2.

8. Guadalupe Canyon ONA ACEC - 378 acres

T. 24 S., R. 32 E.,
Sec. 11, lot 4;
Sec. 14, lots 1 and 2, W1/2NE1/4, S1/2NW1/4;
Sec. 15, SE1/4NE1/4, W1/2SE1/4SW1/4;
Sec. 16, S1/2SE1/4SE1/4;
Sec. 21, lots 1 and 2;
Sec. 22, lot 4.

9. Bowie Mountain Scenic ACEC - 2,230 acres

T. 15 S., R. 28 E.,
Sec. 11, S1/2;
Sec. 12, S1/2S1/2;
Sec. 13, N1/2, SE1/4, E1/2SW1/4, NW1/4SW1/4;
Sec. 14, NE1/4, NE1/4SE1/4, E1/2NW1/4SE1/4, NE1/4NW1/4, NE1/4SE1/4NW1/4.

T. 15 S., R. 29 E.,
Sec. 7, SW1/4SE1/4, SW1/4SW1/4;
Sec. 18, all;
Sec. 19, N1/2N1/2.

10. Eagle Creek Bat Cave ACEC - 40 acres

T. 5 S., R. 29 E.,
Sec. 6, NE1/4SW1/4.

11. Willcox Playa NNL ACEC - 2,475 acres

T. 14 S., R. 24 E.,
Sec. 33, lots 1-4 incl., NE1/4, W1/2;
Sec. 34, lot 4, NW1/4.

T. 15 S., R. 24 E.,
Sec. 4, NE1/4NE1/4, W1/2NE1/4, NW1/4SE1/4, W1/2;
Sec. 5, lots 1 and 2, E1/2, SW1/4, S1/2NW1/4;
Sec. 6, lot 1, SE1/4NE1/4;
Sec. 8, N1/2;
Sec. 9, NE1/4NW1/4, W1/2NW1/4.

12. 111 Ranch RNA ACEC - 2,688 acres

T. 8 S., R. 28 E.,
Sec. 26, W1/2SW1/4, SW1/4NW1/4;
Sec. 27, S1/2N1/2, S1/2;
Sec. 28, S1/2NE1/4, SE1/4, E1/2SW1/4, SW1/4SW1/4;
Sec. 32, lot 4, E1/2NE1/4, NE1/4SE1/4;
Sec. 33, lots 1-4 incl., N1/2, N1/2S1/2;
Sec. 34, lots 1-4 incl., N1/2, N1/2S1/2;
Sec. 35, lot 1, NW1/4SW1/4, W1/2NW1/4.

T. 9 S., R. 28 E.,
Sec. 4, lots 1-3 and 6, SW1/4NE1/4, NE1/4NW1/4.

13. Fourmile Canyon Campground - 159 acres

T. 7 S., R. 20 E.,
Sec. 18, lots 1 and 2, NE1/4NW1/4, SE1/4NW1/4.

14. Oliver Knoll Atmospheric Deposition Monitoring Station - 10 acres

T. 4 S., R. 24 E.,
Sec. 22, SW1/4SE1/4SE1/4NE1/4, SE1/4SW1/4SE1/4NE1/4, NW1/4NE1/4NE1/4SE1/4, NE1/4NW1/4NE1/4SE1/4.

15. District Office Site (proposed) - 12 acres

T. 7 S., R. 25 E.,
Sec. 24, that portion of the W1/2NW1/4NE1/4 lying north of the Golf Course Road.

16. Yuma Wash Archaeological Site - 120 acres

No legal description will be listed as required by the Archaeological Resources Protection Act.

17. Tres Alamos Archaeological Site - 160 acres

No legal description will be listed as required by the Archaeological Resources Protection Act.

18. Midway Cave Archaeological Site - 40 acres

No legal description will be listed as required by the Archaeological Resources Protection Act.

Alternative B

Gila and Salt River Meridian, Arizona

1. Black Rock RNA ACEC - 309 acres

T. 5 S., R. 21 E.,
Sec. 34, S1/2SE1/4SW1/4.

T. 6 S., R. 21 E.,
Sec. 3, lots 1-3, S1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4.

2. Bonita Creek ACEC - 2,467 acres

T. 4 S., R. 27 E.,
Sec. 27, lots 1 and 2;
Sec. 34, W1/2NE1/4, E1/2SE1/4NW1/4, E1/2SW1/4, W1/2SE1/4.

T. 5 S., R. 27 E.,
Sec. 3, lot 6, W1/2SW1/4NE1/4, E1/2SE1/4SW1/4, SW1/4SE1/4;
Sec. 10, N1/2NE1/4, NW1/4SE1/4;
Sec. 11, W1/2E1/2NW1/4, W1/2NW1/4, W1/2E1/2SW1/4, SW1/4SW1/4;
Sec. 14, W1/2SW1/4NE1/4, E1/2NW1/4, E1/2E1/2SW1/4, W1/2W1/2SE1/4;
Sec. 23, W1/2NW1/4NE1/4, SW1/4NE1/4, E1/2NE1/4NW1/4, NE1/4SE1/4NW1/4, W1/2SE1/4, SW1/4SE1/4SE1/4;
Sec. 25, W1/2NW1/4SW1/4, SW1/4SW1/4;
Sec. 26, W1/2NE1/4NE1/4, E1/2W1/2NE1/4, SE1/4NE1/4, NE1/4SE1/4, E1/2SE1/4SE1/4;
Sec. 36, SW1/4NE1/4, S1/2NE1/4NW1/4, NW1/4NW1/4, N1/2SW1/4NW1/4, SE1/4NW1/4, NE1/4SE1/4, E1/2NW1/4SE1/4, N1/2SE1/4SE1/4.

T. 5 S., R. 28 E.,
Sec. 31, lots 5-7, SW1/4SW1/4SW1/4, S1/2SE1/4SW1/4.

T. 6 S., R. 28 E.,
Sec. 5, lots 5 and 6, SW1/4NE1/4, S1/2NW1/4, W1/2SE1/4;
Sec. 6, lot 8;
Sec. 8, NE1/4NE1/4, E1/2NW1/4NE1/4, NW1/4NW1/4NE1/4, E1/2SE1/4NE1/4;
Sec. 9, S1/2NW1/4NW1/4, SW1/4NW1/4, W1/2SW1/4;
Sec. 16, W1/2SE1/4NW1/4, W1/2NW1/4, NE1/4SE1/4, E1/2SW1/4SE1/4, SW1/4SE1/4;
Sec. 21, NW1/4NE1/4, E1/2SW1/4NE1/4, W1/2SE1/4NE1/4, NE1/4SE1/4.

3. Gila Box ONA ACEC - 14,155 acres

T. 5 S., R. 28 E.,
Sec. 25, SE1/4SE1/4;
Sec. 36, lots 1 and 2, NE1/4, W1/2SE1/4, SE1/4SW1/4.

T. 5 S., R. 29 E.,
Sec. 11, SE1/4NE1/4, SE1/4;
Sec. 12, lot 1 and 5-16 incl., SW1/4, S1/2NW1/4;
Sec. 14, N1/2, SW1/4;
Sec. 15, S1/2NE1/4, SE1/4, S1/2SW1/4;
Sec. 16, S1/2SE1/4;
Sec. 20, S1/2S1/2;
Sec. 21, E1/2, SW1/4;
Sec. 22, all;
Sec. 25, lots 5-16 incl., SE1/4SW1/4, N1/2SW1/4, S1/2NW1/4;
Sec. 26, N1/2, SW1/4SE1/4, SW1/4;
Sec. 27, N1/2, N1/2S1/2, SE1/4SE1/4;
Sec. 28, N1/2, NE1/4SE1/4, NW1/4SW1/4;
Sec. 29, NE1/4, N1/2SE1/4, SW1/4, S1/2NW1/4;
Sec. 30, NE1/4, E1/2SE1/4;
Sec. 31, NE1/4NE1/4, S1/2NE1/4, N1/2SE1/4, SW1/4SE1/4, W1/2;
Sec. 32, N1/2NW1/4;
Sec. 34, NE1/4NE1/4;
Sec. 35, N1/2N1/2, SW1/4NE1/4, S1/2NW1/4;
Sec. 36, lots 1-4 incl., N1/2NW1/4.

T. 5 S., R. 30 E.,
Sec. 7, lots 3, 4, 6, and 7;
Sec. 30, lots 3 and 4, SW1/4SE1/4, E1/2SW1/4;
Sec. 31, lots 5, 6, 9-11, 15, 16, 18, 19, E1/2, SE1/4SW1/4;
Sec. 32, SE1/4SE1/4, W1/2SE1/4, W1/2.

T. 6 S., R. 28 E.,
Sec. 1, lots 1-4 incl., S1/2N1/2, S1/2;
Sec. 2, lot 1, S1/2N1/2, S1/2;
Sec. 3, SE1/4SE1/4;
Sec. 10, E1/2;
Sec. 11, all;
Sec. 12, N1/2, NW1/4SE1/4, N1/2SW1/4;
Sec. 14, N1/2NE1/4, W1/2;
Sec. 15, E1/2E1/2;
Sec. 20, S1/2SE1/4;
Sec. 21, SE1/4NE1/4, E1/2SE1/4, SW1/4SW1/4;
Sec. 22, NE1/4, NW1/4SE1/4, NE1/4SW1/4, W1/2SW1/4, S1/2NW1/4, NE1/4NW1/4;
Sec. 23, N1/2NW1/4, SW1/4NW1/4;
Sec. 27, W1/2NW1/4;
Sec. 28, N1/2, N1/2SE1/4;
Sec. 29, lots 1 and 2, NE1/4, E1/2NW1/4.

T. 6 S., R. 29 E.,
Sec. 6, lots 1-7 incl., S1/2NE1/4, W1/2SE1/4, E1/2SW1/4, SE1/4NW1/4;
Sec. 7, lots 1 and 2, E1/2NW1/4.

T. 6 S., R. 30 E.,
Sec. 3, lots 9-12 incl., S1/2NW1/4;
Sec. 4, lots 1 and 8-15 incl., S1/2NW1/4;
Sec. 5, lot 1.

4. Table Mountain RNA ACEC - 1,220 acres

T. 7 S., R. 18 E.,
Sec. 9, S1/2SW1/4SW1/4;
Sec. 15, SW1/4;
Sec. 16, all;
Sec. 17, E1/2NE1/4;
Sec. 22, W1/2.

5. Desert Grasslands RNA ACEC - 790 acres

T. 3 S., R. 16 E.,
Sec. 16, lots 1-4 incl., S1/2S1/2;
Sec. 21, N1/2NE1/4;
Sec. 22, N1/2NW1/4.

T. 6 S., R. 19 E.,
Sec. 17, S1/2SW1/4SW1/4, SW1/4SE1/4SW1/4;
Sec. 20, W1/2NE1/4NW1/4, NW1/4NW1/4.

T. 8 S., R. 18 E.,
Sec. 22, E1/2SE1/4;
Sec. 23, W1/2W1/2SW1/4;
Sec. 26, W1/2W1/2NW1/4;
Sec. 27, E1/2E1/2.

6. Dry Spring RNA ACEC - 825 acres

T. 3 S., R. 17 E.,
Sec. 20, E1/2SE1/4;
Sec. 27, W1/2W1/2 north of the Gila River;
Sec. 28, all north of the Gila River;
Sec. 29, E1/2NE1/4 north of the Gila River,
E1/2W1/2NE1/4 north of the Gila River.

7. Bear Springs Badlands ACEC - 4,127 acres

T. 6 S., R. 23 E.,
Sec. 26, SW1/4SW1/4;
Sec. 27, S1/2NE1/4, S1/2;
Sec. 34, lots 1-4 incl., N1/2, N1/2S1/2;
Sec. 35, lot 4, W1/2NW1/4, NW1/4SW1/4.

T. 7 S., R. 23 E.,
Sec. 1, SW1/4SW1/4, SE1/4SE1/4;
Sec. 2, lots 3 and 4, S1/2NE1/4, S1/2NW1/4,
S1/2;
Sec. 3, lots 1-4 incl., S1/2N1/2, S1/2;
Sec. 4, lots 1-4 incl., S1/2N1/2, S1/2;
Sec. 10, N1/2;
Sec. 11, N1/2;
Sec. 12, N1/2.

8. Guadalupe Canyon ONA ACEC - 378 acres

T. 24 S., R. 32 E.,
Sec. 11, lot 4;
Sec. 14, lots 1 and 2, W1/2NE1/4, S1/2NW1/4;
Sec. 15, SE1/4NE1/4, W1/2SE1/4SW1/4;
Sec. 16, S1/2SE1/4SE1/4;
Sec. 21, lots 1 and 2;
Sec. 22, lot 4.

9. Bowie Mountain Scenic ACEC - 3,600 acres

T. 15 S., R. 28 E.,
Sec. 11, S1/2;
Sec. 12, S1/2S1/2;
Sec. 13, all;
Sec. 14, all;
Sec. 24, all.

T. 15 S., R. 29 E.,
Sec. 7, SW1/4SE1/4, SW1/4SW1/4;
Sec. 18, all;
Sec. 19, N1/2, SW1/4.

10. Eagle Creek Canyon ONA ACEC - 3,642 acres

T. 4 S., R. 28 E.,
Sec. 3, lot 3, S1/2NW1/4, SW1/4;
Sec. 4, lots 1-4 incl., S1/2N1/2, S1/2;
Sec. 5, lots 1 and 2, SE1/4NE1/4, E1/2SE1/4;
Sec. 9, E1/2E1/2;
Sec. 23, SW1/4SW1/4;
Sec. 25, SW1/4SE1/4, SE1/4SW1/4;
Sec. 26, NW1/4SE1/4, N1/2SW1/4,
SW1/4SW1/4, NW1/4;
Sec. 35, SE1/4, NW1/4.

T. 5 S., R. 28 E.,
Sec. 1, lots 1 and 4, SE1/4NE1/4, S1/2SE1/4,
E1/2SW1/4, S1/2NW1/4;
Sec. 12, N1/2NE1/4;
Sec. 13, E1/2NE1/4.

T. 5 S., R. 29 E.,
Sec. 6, NE1/4SW1/4;
Sec. 7, E1/2E1/2, NW1/4NE1/4, W1/2W1/2;
Sec. 18, NE1/4NE1/4, SE1/4SE1/4, W1/2SW1/4,
NE1/4SW1/4;
Sec. 19, E1/2E1/2, SW1/4NE1/4, SW1/4SW1/4,
NW1/4NW1/4;
*Sec. 30, W1/2NE1/4.

*This 80 acre parcel is also located in the Gila Box ONA ACEC.

11. Willcox Playa NNL ACEC - 2,475

T. 14 S., R. 24 E.,
Sec. 33, lots 1-4 incl., NE1/4, W1/2;
Sec. 34, lot 4, NW1/4.

T. 15 S., R. 24 E.,
Sec. 4, NE1/4NE1/4, W1/2NE1/4, NW1/4SE1/4,
W1/2;
Sec. 5, lots 1 and 2, E1/2, SW1/4, S1/2NW1/4;
Sec. 6, lot 1, SE1/4NE1/4;
Sec. 8, N1/2;
Sec. 9, NE1/4NW1/4, W1/2NW1/4.

12. 111 Ranch RNA ACEC - 2,688 acres

T. 8 S., R. 28 E.,
Sec. 26, W1/2SW1/4, SW1/4NW1/4;
Sec. 27, S1/2N1/2, S1/2;
Sec. 28, S1/2NE1/4, SE1/4, E1/2SW1/4,
SW1/4SW1/4;
Sec. 32, lot 4, E1/2NE1/4, NE1/4SE1/4;
Sec. 33, lots 1-4 incl., N1/2, N1/2S1/2;
Sec. 34, lots 1-4 incl., N1/2, N1/2S1/2;
Sec. 35, lot 1, NW1/4SW1/4, W1/2NW1/4.

T. 9 S., R. 28 E.,
Sec. 4, lots 1-3 and 6, SW1/4NE1/4,
NE1/4NW1/4.

13. Fourmile Canyon Campground - 159 acres

T. 7 S., R. 20 E.,
Sec. 18, lots 1 and 2, NE1/4NW1/4, SE1/4NW1/4.

14. Oliver Knoll Atmospheric Deposition Monitoring Station - 10 acres

T. 4 S., R. 24 E.,
Sec. 22, SW1/4SE1/4SE1/4NE1/4,
SE1/4SW1/4SE1/4NE1/4,
NW1/4NE1/4NE1/4SE1/4,
NE1/4NW1/4NE1/4SE1/4.

15. District Office Site (proposed) - 12 acres

T. 7 S., R. 25 E.,
Sec. 24, that portion of the W1/2NW1/4NE1/4 lying north of the Golf Course Road.

16. Yuma Wash Archaeological Site - 120 acres

No legal description will be listed as required by the Archaeological Resources Protection Act.

17. Tres Alamos Archaeological Site - 160 acres

No legal description will be listed as required by the Archaeological Resources Protection Act.

18. Midway Cave Archaeological Site - 40 acres

No legal description will be listed as required by the Archaeological Resources Protection Act.

Alternative C

Gila and Salt River Meridian, Arizona

1. Bowie Mountain Scenic ACEC - 2,230 acres

T. 15 S., R. 28 E.,
Sec. 11, S1/2;
Sec. 12, S1/2S1/2;
Sec. 13, N1/2, SE1/4, E1/2SW1/4, NW1/4SW1/4;
Sec. 14, NE1/4, NE1/4SE1/4, E1/2NW1/4SE1/4,
NE1/4NW1/4, NE1/4SE1/4NW1/4.

T. 15 S., R. 29 E.,
Sec. 7, SW1/4SE1/4, SW1/4SW1/4;
Sec. 18, all;
Sec. 19, N1/2N1/2.

2. Fourmile Canyon Campground - 159 acres

T. 7 S., R. 20 E.,
Sec. 18, lots 1 and 2, NE1/4NW1/4, SE1/4NW1/4.

3. Oliver Knoll Atmospheric Deposition Monitoring Station - 10 acres

T. 4 S., R. 24 E.,
Sec. 22, SW1/4SE1/4SE1/4NE1/4,
SE1/4SW1/4SE1/4NE1/4,
NW1/4NE1/4NE1/4SE1/4,
NE1/4NW1/4NE1/4SE1/4.

4. District Office Site (proposed) - 12 acres

T. 7 S., R. 25 E.,
Sec. 24, that portion of the W1/2NW1/4NE1/4 lying north of the Golf Course Road.

Appendix 10

Legal Description for Lands Proposed for Mineral Leasing Withdrawal

APPENDIX 10

Legal Description of Lands Proposed for Mineral Leasing Withdrawal

Alternative A

No lands are proposed for withdrawal from mineral leasing under this alternative.

Alternative B

The following lands are proposed for withdrawal from mineral leasing.

Gila and Salt River Meridian, Arizona

1. Black Rock RNA ACEC - 309 acres

T. 5 S., R. 21 E.,
Sec. 34, S1/2SE1/4SW1/4.
T. 6 S., R. 21 E.,
Sec. 3, lots 1-3, S1/2NE1/4, SE1/4NW1/4,
NE1/4SW1/4, N1/2SE1/4.

2. Dry Spring RNA ACEC - 825 acres

T. 3 S., R. 17 E.,
Sec. 20, E1/2SE1/4;
Sec. 27, W1/2W1/2 north of the Gila River;
Sec. 28, all north of the Gila River;
Sec. 29, E1/2NE1/4 north of the Gila River,
E1/2W1/2NE1/4 north of the Gila River.

Alternative C

No lands are proposed for withdrawal from mineral leasing under this alternative.

Appendix 11

Water Quality Testing Sites

Water Quality Testing Sites Alternatives A, B, and C

Site Name	Legal Description	Type of Analysis	Reason for Sampling
Aravaipa Creek	T. 6 S., R19 E., Sec. 19, SW1/4NE1/4	chemical/ biological	public health/ Unique Waters
Aravaipa Creek	T. 6 S., R. 17 E., Sec. 13, NW1/4SE1/4	chemical/ biological	public health/ Unique Waters
Aravaipa Creek	T. 6 S., R. 18 E., Sec. 16, NW1/4NW1/4	chemical/ biological	public health/ Unique Waters
Aravaipa Creek	T. 6 S., R. 18 E., Sec. 17, NW1/4NE1/4	chemical/ biological	public health/ Unique Waters
Virgus Canyon	T. 6 S., R. 18 E., Sec. 27, SE1/4	chemical/ biological	data base
Hells Half Acre Canyon	T. 6 S., R. 18 E., Sec. 18, SW1/4SW1/4	bacteriological	public health
Javelina Canyon	T. 6 S., R. 18 E., Sec. 7, SE1/4SE1/4	bacteriological	public health
Horse Camp Canyon	T. 6 S., R. 18 E., Sec. 9, SW1/4SW1/4	bacteriological	public health
Booger Canyon	T. 6 S., R. 18 E., Sec. 15, NE1/4NW1/4	bacteriological	public health
Paisano Canyon	T. 6 S., R. 18 E., Sec. 14, NW1/4NW1/4	bacteriological	public health
Hell Hole Canyon (Deer Creek)	T. 6 S., R. 18 E., Sec. 13, SW1/4SW1/4	bacteriological	public health
Parsons Canyon	T. 6 S., R. 18 E., Sec. 24, SW1/4NW1/4	bacteriological	public health
Turkey Creek	T. 6 S., R. 19 E., Sec. 19, NW1/4SE1/4	bacteriological	public health
Fourmile Canyon Campground	T. 7 S., R. 19 E., Sec. 18, NE1/4NW1/4	chemical/ biological	public health
Aravaipa Well	T. 7 S., R. 19 E., Sec. 7, NE1/4SE1/4	chemical/ biological	public health
Aravaipa Well	T. 6 S., R. 17 E., Sec. 24, NW1/4SW1/4	chemical/ biological	public health
Bonita Creek	T. 5 S., R. 27 E., Sec. 3, SW1/4SE1/4	chemical/ biological	Unique Waters
Bonita Creek	T. 5 S., R. 27 E., Sec. 36, SE1/4NW1/4	chemical/ biological	Unique Waters
Bonita Creek	T. 6 S., R. 28 E., Sec. 16, NE1/4SW1/4	chemical/ biological	Unique Waters
San Pedro River	T. 23 S., R. 22 E., Sec. 9, SE1/4SE1/4	chem/biol/ bacteriological	public health/ data base
San Pedro River	T. 20 S., R. 21 E., Sec. 3, SW1/4NW1/4	chem/biol/ bacteriological	public health/ data base
Hereford Well	T. 23 S., R. 22 E., Sec. 10, SE1/4SW1/4	chem/biol/ bacteriological	public health
Hereford Well	T. 23 S., R. 22 E., Sec. 16, NW1/4SW1/4	chem/biol/ bacteriological	public health
Boquillas Ranch Well	T. 20 S., R. 21 E., Sec. 15, SE1/4NE1/4	chemical/ biological	public health
San Pedro House Well	T. 22 S., R. 22 E. Sec. 6, SE1/4NE1/4	chemical/ biological	public health
Fairbank Well	T. 20 S., R. 21 E., Sec. 3, SW1/4NE1/4	chem/biol/ bacteriological	public health
Fairbank Well	T. 20 S., R. 21 E., Sec. 3, NW1/4SE1/4	chem/biol/ bacteriological	public health
Redfield Canyon	T. 11 S., R. 20 E., Sec. 32, NW1/4SW1/4	chemical/ biological	Unique Waters
Bass Canyon	T. 12 S., R. 20 E., Sec. 6, SE1/4NE1/4	chemical/ biological	Unique Waters
Hot Springs Canyon	T. 12 S., R. 20 E., Sec. 32, SE1/4SE1/4	chemical/ biological	Unique Waters
Hot Well	T. 10 S., R. 28 E., Sec. 36, NE1/4NE1/4	chemical/ biological	public health

Appendix 12

Desert Tortoise Categorization Criteria

APPENDIX 12

Desert Tortoise Categorization Criteria

These are goals and criteria for three categories of desert tortoise habitat areas. The criteria are ranked by importance to the categorization process, with Criterion 1 being the most important.

Items	Category I Habitat Areas	Category II Habitat Areas	Category III Habitat Areas
Category Goals	Maintain stable, viable populations & protect existing tortoise habitat values; increase populations, where possible.	Maintain stable, viable populations & halt further declines in tortoise habitat values.	Limit tortoise habitat and population declines to the extent possible by mitigating impacts.
Criterion 1	Habitat Area essential to maintenance of large, viable populations.	Habitat Area may be essential to maintenance of viable populations.	Habitat Area not essential to maintenance of viable populations.
Criterion 2	Conflicts resolvable.	Most conflicts resolvable	Most conflicts not resolvable.
Criterion 3	Medium to high density or low density contiguous with medium or high density.	Medium to high density or low density contiguous with medium or high density.	Low to medium den sity not contiguous with medium or high density.
Criterion 4	Increasing, stable or decreasing population.	Stable or decreasing population.	Stable or decreasing population.

Source: *Desert Tortoise Habitat Management on the Public Lands: A Rangewide Plan.*

Appendix 13

Cultural Resource Management Objectives and Use Categories

Cultural Resource Management Objectives

All cultural resource properties, both known and projected to be present, will be managed under each alternative according to the management objectives established for the property. The management objectives are determined by the type of values (scientific, public use) held by the property. A site may have more than one management objective assigned and the objectives do not have to be fully compatible. The management objectives established for a given site may be changed as new data is acquired or management goals change. The following management objectives were established for the RMP.

A. **Manage for Information Potential** - Cultural resources included under this objective are capable of contributing useful scientific, historic or management information. This information potential is to be protected to the extent needed, by physical or administrative means, until the poten tial has been realized through appropriate study.

B. **Manage for Public Values** - Cultural resources included under this objective possess identified socio-cultural, education, recreation or other public values. Their locations are to be managed in a manner that gives adequate consideration to these values.

C. **Manage for Conservation** - Cultural resources included under this objective have overriding scientific or historic importance. They are to be managed to maintain them in their present condition and to protect them from potential conflicting land or resource uses.

Cultural Resource Use Categories

All cultural properties will be allocated to uses. A cultural property should generally be allocated to a single use - the primary intended use - and management prescriptions formed to allow non-conflicting uses. Use allocation will be deferred to Cultural Resource Management Plans (CRMP). The following are the Bureau's Cultural Resource Use Categories.

A. **Scientific Use** is a category that applies to any cultural property determined to be suitable for consideration as the subject of scientific or historic study utilizing research techniques currently available. This includes studies resulting in its physical alteration and signifies that it need not be conserved in the face of an appropriate research or data recovery (mitigation) proposal. (Management Objective: Manage for Information Potential.)

B. **Management Use** - is a category that may be applied to any cultural property considered most useful for controlled experimental study resulting in its physical alteration. This is conducted by BLM or other entities concerned with the management of cultural properties. Expenditure of cultural properties or cultural resource data may be justified for purposes of obtaining specific information ultimately aiding in the management of other cultural properties. Experimental study may be aimed toward a better understanding of kinds and rates of natural or human-caused deterioration, effectiveness of protection measures and similar lines of inquiry. (Management Objective: Manage for Information Potential.)

C. **Public Use** - is a category that may be applied to any cultural property found to be appropriate for consideration as an interpretive exhibit-in-place, a subject of supervised participation in scientific or historic study or related education and recreation uses by members of the general public. (Management Objective: Manage for Public Values.)

D. **Socio-cultural Use** - is a category to be applied to any cultural resource that is perceived by a specified social and/or cultural group as having attributes contributing to maintaining the heritage or existence of that group. This use category signifies that the cultural resource is to be managed in a way that takes those attributes into account, as applicable. (Management Objective: Manage for Public Values.)

E. **Conservation for Future Use** - is a category reserved for cultural resources that are unusual because they are scarce; have research potential that surpasses the current state of the art; or are of singular historic importance, architectural interest or comparable reasons. Therefore, they are not currently appropriate for consideration as the subject of scientific or historic study resulting in their physical alteration. They are considered worthy of segregation from other land or resource uses threatening the maintenance of their present condition and will remain in this use category until the following provisions are met in the future. (Management Objective: Manage for Conservation.)

1. No other property exists that could yield the information required to meet the priority regional (southeast Arizona) research objectives.

2. All properties of this type allocated to public use have been developed to their greatest capacity for public use and no other property exists that could meet a high public need and demand for public use.

3. The change in allocation to another use is determined by the District Manager to be the best use of the property at the time to meet the District's and the Bureau's cultural resource management goals.

4. Another property has been discovered that would be as suitable for allocation to conservation use and it will be so allocated.

5. The property was allocated to conservation use because its research potential surpassed the current state of the art and research methodologies have developed to the point where the property's research values can now be appropriately recovered.

F. **Discharged Use** - means either 1) that a cultural resource that previously qualified for assignment to any of the categories defined above no longer possesses the qualifying characteristics for that use or for assignment to an alternative use 1/, or 2) that a cultural property's scientific use potential was so slight that it was exhausted at the time the property was recorded and no alternative use is appropriate 2/. Allocation to discharged use also means that records pertaining to the property represent its only remaining importance and that its location no longer presents a management constraint for competing land uses.

1/ A small, shallow rock-shelter could be fully excavated, thereby realizing its scientific use potential, or it could be completely looted, destroying its potential. Knowledge that once existed is still important and it would continue to be represented in the inventory records.

2/ A small lithic scatter could be sufficiently recorded on discovery that no further field study could be needed. Because field inspection and recording of individual cultural properties must precede the recommendation and allocation, classes of unrecorded cultural properties may not be allocated to discharged use in advance of discovery.

GLOSSARY & REFERENCES

Glossary

Activity Plan. A more detailed plan of actions to implement planning decisions over a specified time period. Examples include allotment management plans, recreation area management plans, habitat management plans and cultural resource project plans.

Air Quality Classes. Classes established by the Environmental Protection Agency to define the amount of air pollution considered significant within an area.

Class I - Areas where any change in air quality would be considered significant and therefore not allowed.

Class II - Areas where the pollution normally accompanying moderate well-controlled growth would be considered allowable.

Class III - Areas where air pollution up to the national standards would be allowed.

Allotment. A land area where one or more operators graze their livestock. It generally consists of public land but may include parcels of private and State owned land. The number of livestock and seasons of use are stipulated for each allotment.

Allotment Management Plan (AMP). A livestock grazing management plan for a specific allotment, based on multiple-use resource management objectives. The AMP considers livestock grazing in relation to other uses of the range and in relation to renewable resources - watershed, vegetation and wildlife. An AMP establishes the seasons of use, number of livestock permitted on the range and needed rangeland developments.

Ambient Air Quality. Related to the quantity of pollutants found in a mass or body of air surrounding or encompassing an area.

Aquatic. Growing or living in or frequenting water.

Area of Critical Environmental Concern (ACEC). A public land area where special management attention is required to protect important historic, cultural, or scenic values; fish and wildlife; natural systems or processes; or life and safety from natural hazards.

Blancan Age Assemblage. Refers to the different species of mammals that characterize the Blancan Land Mammal Age in North America. The Blancan Age occurred from 4,300,000 years ago to 1,900,000 years ago. Mammals typical to the period include Equus (horse), Borophagus and Chasmoporthetes (carnivores), Stegomastodon (elephant-like), and Hemiauchenia (camel), among others.

Bosque. A woodland dominated by trees over 15 feet tall.

Bureau of Land Management (BLM). An agency of the U.S. Department of the Interior responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based on the principles of multiple use and sustained yield; a combination of uses that takes into account the long-term needs of future generations for renewable and non-renewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness, natural, scenic, scientific and cultural values.

Candidate Species. Any plant or animal species not protected under the *Endangered Species Act* but under consideration by the Fish and Wildlife Service for inclusion on the list of federally threatened or endangered species.

Cenozoic Era. A geologic era that lasted from about 65,000,000 years ago to present.

Chaparral. A plant community characterized by evergreen shrubs, usually less than 15 feet tall.

Cienega. A riparian community characterized by low sedges growing on saturated, highly organic, reducing soils.

Community. An aggregate of organisms that form a distinct ecological unit. Such a unit may be defined in terms of plants, animals or both.

Conglomerate. Sedimentary rock consisting of relatively large rounded grains (about gravel-sized) cemented together with much finer grains (sand or silt-sized).

Conifer. A cone-bearing tree or shrub.

Cretaceous Period. A subdivision of the Mesozoic Era that lasted from about 145,000,000 to 65,000,000 years ago.

Cultural Resource. The fragile and nonrenewable remains of human activity, occupation or use; as reflected in districts, sites, artifacts, ruins, works of art, architecture and natural features. These resources include physical remains, areas where significant human events occurred (even though evidence of the event no longer remains) and the environment immediately surrounding the resource. Also, traditional lifeway values are abstract, nonmaterial cultural resources that make up a group's shared values.

Cultural Resource Inventory Classes.

Class I - A prepared study of existing cultural resource data from published and unpublished documents, various institutional site inventory records, State and national registers, and other sources leading to a compilation and analysis of all available data and synthesis of the data.

Class II - A professionally conducted, statistically based sample survey designed to characterize the probable density, diversity and distribution of cultural properties within a project area. Sample units are inventoried with the methods described under Class III. Several phases with differing sample designs and intensities may be conducted.

Class III - A professionally conducted, systematic and intensive survey of a given area, aimed at locating and recording all cultural properties. Crew members commonly walk parallel, closely-spaced transects until the area has been thoroughly examined.

Cultural Resource Site. A physical location of past human activities or events. Sites vary in size, ranging from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features.

Cumulative Impacts. The collective impacts of all actions affecting a particular resource.

Dispersed Recreation. Recreation activities that do not require developed sites or facilities.

Diversity. The relative abundance of plant and wildlife species, communities, habitats or habitat features per unit of area.

Ecosystem. A complex self-sustaining natural system that includes living and non-living components of the environment and the interactions that bind them together. Its functioning involves the circulation of matter and energy between organisms and their environment.

Encinal. A woodland dominated by oak trees.

Endangered Species. Any plant or animal species in danger of extinction throughout all or a significant part of its range.

Environment. The surrounding conditions, influences or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.

Environmental Assessment (EA). The procedure for analyzing the impacts of a proposed action on a given environment and the documentation of the analysis. An EA is similar to an environmental impact statement (EIS) but is generally smaller in scope. An EA may be preliminary to an EIS.

Environmental Impact Statement (EIS). An analytical document prepared for use by decisionmakers to weigh the environmental consequences of a potential decision. An EIS should accurately portray potential impacts to the environment of a particular course of action and its possible alternatives.

Ephemeral. Lasting only a short period of time.

Erosion. The wearing away of the soil and surface by running water, wind, ice or other geological agents.

Ethnographic Study. The structured and systematic fieldwork-based study and description of specific cultures.

Extensive Recreation Management Area (ERMA). Areas where recreation is unstructured and dispersed, and where minimal recreation related investments are required. These areas, constituting the majority of the public lands, give recreation visitors the freedom of recreation choice with minimal regulatory constraints.

Extirpated. Refers to species that once occupied an area but have since been eliminated from that part of their range.

Fauna. Animals or animal life.

Federal Land Policy and Management Act of 1976 (FLPMA). The law that gives BLM the legal authority to establish public land policy; establish guidelines for administering such policy; and provide for the management, protection, inventory, development and enhancement of the public lands.

Fire Management. The integration of fire suppression, prescribed fire and fire ecology knowledge into multiple use planning, decisionmaking and land management activities.

Floodplain. The flat ground along a stream or river covered by water during high flood stage.

Flora. Plants or plant life.

Forage. All browse and herbaceous foods, available to grazing animals, that may be grazed or harvested for feeding.

Fossil. Any remains, trace or imprint of an ancient plant or animal that has been preserved by natural processes.

Gallery Forest. A forest community dominated by very large, mature trees that lack a significant understory of younger, replacement individuals.

Geophysical Exploration. Exploring for minerals by remote sensing means, such as by seismic work.

Geothermal Energy. Energy derived from the earth's natural heating of groundwaters, such as a hot spring.

Herptiles. Amphibians and reptiles as a combined group.

Habitat. A specific set of physical conditions that surround a single species, a group of species or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover and living space.

Habitat Management Plan (HMP). A written and officially approved plan (for a specific geographical area of public land) that identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives and outlines procedures for evaluating accomplishments.

Hardrock Mining. The extraction of locatable minerals, except for placer deposits.

Hazardous Materials (HAZMAT). Any substance that poses a threat to the health or safety of people or the environment. These include any material that is toxic, ignitable, corrosive or radioactive.

Igneous Rock. Rock formed by the cooling of magma within the earth (intrusive) or on the earth's surface (extrusive or volcanic).

Impact. A change in the ecosystem resulting from or accelerated by human action.

Inholding. A parcel of State or private land surrounded by public lands.

Instream Flow. Surface water flowing freely in a natural stream channel in sufficient quantity to preserve the associated resource values. A term commonly associated with a water right. Instream flow can be obtained by submit ting an application, to appropriate a specified quantity of surface water, to the Arizona Department of Water Resources. The application requires specific rationale for granting an instream flow, such as the maintenance of fisheries, riparian habitat, recreation use or wildlife. Also required as part of the application are the establishment of minimum flows and the development of a hydrologic assessment to demonstrate that the requested quantity of water is available.

Interim Management Policy (IMP). BLM's guidelines for management of lands under wilderness review to preserve their wilderness values. The policy will apply to WSAs until Congress decides to designate the areas wilderness or release them for other uses.

Irvingtonian Vertebrate Fauna. Refers to the animals with backbones char acterizing the Irvington Land Mammal Age in North America. The Irvington Age occurred from 1,900,000 years ago to 500,000 year ago. Characteristic animals include Mammuthus (elephant), Smilodon (stabbing cat), Paramylodon (ground sloth), among others.

Intermittent Flow. Water flow occurring in a natural channel for longer than several weeks after a major storm but ceases flow during extended dry periods. Any flow lasting longer than two weeks, but less than eleven months.

Issues. Controversies or concerns about existing and potential land and resource allocations; levels of resource use, production or protection; and BLM's management practices.

Land Treatment. Alteration of the soil and/or vegetation of an area by mechanical or chemical means or by burning.

Leasable Minerals. Those minerals or materials designated as Leasable under the *Mineral Leasing Act of 1920.* They include coal, phosphate, asphalt, sulphur, potassium and sodium minerals, and oil and gas. Geothermal resources are also Leasable under the *Geothermal Steam Act of 1970.*

Locatable Minerals. Any mineral or material that can have a mining claim filed for it under the *Mining Law of 1872*, as amended. Generally includes metallic minerals such as gold and silver and other materials not subject to lease or sale (some bentonites, limestone, talc, some zeolites, etc.). Whether a particular mineral deposit is locatable depends on such factors as quality, quantity, mineability, demand and marketability.

Location. The act of fixing the boundaries of a mining claim according to law or the claim itself.

Management Concern. Planning issues that are not of a controversial nature and normally require less detailed analysis to resolve. Management concerns are often identified by BLM staff and present opportunities to improve management of the public lands and resources.

Management Framework Plan (MFP). A land use plan that provides a set of goals, objectives and constraints for a specific planning area. An MFP guides the development of detailed plans for management of each resource in the planning area.

Management Situation Analysis (MSA). A BLM reference document describing the affected environment of the planning area, including current management practices and programs. The MSA is a basic descriptive and analytic reference for resource condition, trend, demands and capabilities in the planning area and provides the basis for formulating and analyzing plan alternatives.

Mesic. Moist areas.

Mesozoic Era. A geologic era that lasted from about 250,000,000 to 65,000,000 years ago.

Metamorphic Rock. Sedimentary or igneous rock that has been altered by heat or pressure.

Mineral Entry. The location of mining claims by an individual to protect his/her right to a valuable mineral.

Mineralization. The processes taking place in the earth's crust resulting in the formation of valuable minerals or ore bodies; the occurrence of poten tially valuable minerals.

Mineralized Area. An area that has exposures or near-surface deposits of potentially valuable minerals.

Mining District. A section of country, usually designated by name, that has described or understood boundaries where minerals are found and mined under rules and regulations prescribed by the miners, consistent with the Mining Law of 1872.

Miocene Epoch. An epoch of the Tertiary Period that lasted from about 24,000,000 to 5,000,000 years ago.

Mitigating Measure. Methods or actions implemented for the purpose of reducing or eliminating the adverse impacts of an action.

Monitor. To scrutinize or check systematically with a goal of collecting certain specified categories of data.

Multiple Use Management. Management of the various surface and subsurface resources so that they are used in the combinations that will best meet the present and future needs of the public, without unnecessary nor undue degradation of the productivity of the land and the quality of the environment.

National Register of Historic Places (NRHP). A list, kept by the Secretary of the Interior, of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology and culture.

National Register Quality Site. A cultural resource site determined to be eligible for listing on the National Register of Historic Places by virtue of its local, State or national significance.

Non-attainment Area. An area where air quality standards are violated for one or more given pollutants. An area may be non-attainment for one pollutant and attainment for others.

Non-point Pollution Source. A collection of accumulated pollutants in the stream, runoff, seepage and percolation contributing to the degradation of the quality of surface or groundwater that cannot be attributed to direct discharge from a specific source, usually by a method of conveyance.

No Surface Occupancy (NSO). A fluid mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the lease surface in order to protect special values or uses. Lessees may exploit the oil and gas or geothermal resources under leases restricted by this stipulation through use of directional drilling from sites outside the no surface occupancy area.

Off-highway Vehicle (OHV). Any motorized or non-motorized, tracked or wheeled vehicle designed for cross-country travel over any type of natural terrain.

Off-highway Vehicle (OHV) Designations.

Open Areas - Areas where OHVs may be operated with no special restrictions. Areas where there are no compelling resource protection needs, user conflicts or public safety issues that warrant limiting crosscountry travel.

Closed Areas - Areas where all vehicle use is permanently or temporarily prohibited to protect natural resources, promote visitor safety or reduce use conflicts.

Limited Areas - Areas where OHV use is limited in some manner to meet specific resource management objectives. Restrictions can include limitations on the number or types of vehicles, on time or season of use, to permitted or licensed use only, to designated or existing roads and trails, etc.

Oligocene Epoch. A geologic epoch in the Tertiary Period lasting from about 37,000,000 to 24,000,000 years ago.

Ore. A mineral deposit of high enough quality to be mined at a profit.

Outstanding Natural Area (ONA). A natural area established to preserve scenic values and areas of natural wonder.

Paleontological Resources. Fossils; the remains of animals and plants that provide information about life in past geologic ages.

Paleontological Site Classification System. A fossil site classification system developed and used by BLM. Three different classes are distinguished:

Class I - Areas within formations or portions of formations that are known to contain or have produced fossils of significant scientific interest. Fossils are exposed on the surface or are very likely to be discovered with detailed field surveys in the area.

Class II - Fossils are present, but while their scientific value has not been established, high scientific values are not anticipated.

Class III - Little likelihood of finding fossils of significant scientific interest. Further consideration of fossils is unnecessary unless future discoveries or information require a change in classification.

Paleontology. The science that deals with the life of past geologic ages. It is based on the study of the fossil remains of organisms and in a restricted sense is the study of fossils.

Paleozoic Era. A geologic era that lasted from about 600,000,000 to 250,000,000 years ago.

Patent. A grant made to an individual or group conveying fee simple title to selected public lands.

Patented Claim. A claim on which title has passed from the federal government to the mining claimant under the *Mining Law of 1872*.

Perennial Stream. A stream that flows year-long, at least in one segment.

Petroglyph. A figure or symbol cut, carved or pecked into stone.

Phreatophyte. Water loving plants.

Physiographic Province. An area with similar geographical features and climate.

Pictograph. A figure or symbol drawn or painted on a stone surface.

Placer Deposit. An alluvial or glacial deposit, as of sand or gravel, containing particles of gold or other valuable minerals.

Planning Criteria. Factors BLM evaluates to develop solutions to the issues and management concerns. Planning criteria focus the preparation of the resource management plan, establishing limits on the analysis that is needed to resolve the issues and concerns.

Planning Issues. See Issues.

Planning Area. The geographical area for which a resource management plan is prepared and maintained.

Pleistocene Assemblage. The species of mammals characteristic of the Pleistocene geologic epoch (or last great ice age), lasting from about 1,600,000 years ago to 11,000 or 12,000 years ago. Mammals typical to the period include the mammoth, camel, horse, dire wolf, etc.

Pliocene Epoch. A geologic epoch at the end of the Tertiary Period, lasting from about 5,000,000 to 1,600,000 years ago.

Precambrian Period. The period of time before the Cambrian Period; lasting from the beginning of the planet to about 600,000,000 years ago.

Prescribed Fire. The skillful application of fire (planned ignition or natural starts) to fuels under planned conditions of weather, fuel moisture, soil moisture, etc. that will allow confinement of the fire to a predetermined area and produce the intensity of heat and rate of spread required to accomplish resource objectives.

Primitive and Unconfined Recreation. Non-motorized and undeveloped types of outdoor recreation (hiking, backpacking, camping, hunting, etc.).

Priority Species. Animal and plant species and habitats having special significance for management. They include endangered, threatened and special status species; species of high economic or recreational value; and aquatic, wetland and riparian habitats. Also included are populations of animals or plants recognized as significant for one or more factors such as density, diversity, size, public interest, remnant character or age.

Proposed Species. Any plant or animal species that is proposed for listing as a threatened or endangered species under the *Endangered Species Act*.

Prospect. An attempt to determine mineral values or the site of this attempt.

Public Land. Federal lands administered by the Bureau of Land Management.

Quaternary Period. A geologic period lasting from about 2,000,000 years ago to the present.

Raptor. A bird of prey with sharp talons and strongly curved beak, such as hawks, eagles, owls, vultures and falcons.

Reclamation. Returning disturbed lands to a form and productivity that will be ecologically balanced and in conformity with a predetermined land management plan.

Research Natural Area (RNA). An area that is established and maintained for the primary purpose of research and education because the land has one or more of the following characteristics: (1) A typical representation of a common plant or animal association; (2) an unusual plant or animal association; (3) a threatened or endangered plant or animal species; (4) a typical representation of common geologic, soil or water features; or (5) outstanding or unusual geologic, soil or water features.

Resource Area. The smallest administrative subdivision of a BLM District.

Resource Management Plan (RMP). A BLM planning document that presents systematic guidelines for making resource management decisions for a resource area. An RMP is based on an analysis of an area's resources, their existing management and their capability for alternative uses. RMPs are issue oriented and developed by an interdisciplinary team with public participation.

Right-of-way (R/W). A legal right to use, occupancy or access across land or water areas for specified purposes.

Right-of-way Avoidance Area. Areas of public land with highly sensitive resource values that are generally unavailable for utility and transportation facility development. Exceptions may be granted if the proposed facility benefits or does not impact the sensitive resources.

Right-of-way Corridor. A linear area of public lands with defined and recognizable boundaries and capacities having ecological, technical, economic, social or similar advantages for the present and future location of rights-of-way. Corridors must also be identified and designated by legal public notice.

Right-of-way Exclusion Area. Areas of public lands that are unavailable for utility and transportation facility development. Rights-of-way may be granted only when required by law.

Riparian Area. An area of land directly influenced by permanent water, either on the surface or as free subsurface water in the rooting zone of water dependent vegetation.

Riparian Vegetation. A plant community dependent upon free water on the surface or as free water in the soil.

Salable Minerals. Common variety minerals used mostly for construction projects (sand and gravel).

Saline Soil. Soil containing soluble salts in an amount that impairs growth of plants.

Salinity. The relative concentration of free salt ions in solution. Salinity is usually expressed in terms of the number of parts per million.

Section. A 1-square mile area forming one of the 36 subdivisions of a township.

Sensitive Species. Those species designated by a BLM State Director, in cooperation with the State agency responsible for managing the species, as sensitive. Sensitive species are those species (1) under status review by the FWS/National Marine Fisheries Service, (2) whose numbers are declining so rapidly that federal listing may become necessary, (3) with typically small and widely dispersed populations or (4) inhabiting ecological refugia or other specialized or unique habitats.

Scoping. An early and open process for determining the issues to be addressed in an EIS, and for identifying the significant issues related to a proposed action. Scoping may include public meetings, field interviews with interested individuals and user groups, discussions with resource specialists and managers, direct mailings, etc.

Sediment. Soil or mineral material transported by water and deposited in streams or other bodies of water.

Sedimentary Rock. Rock consisting of consolidated sediments (shale, siltstone, sandstone and limestone).

Shrub. A plant that has a persistent woody stem, a relatively low growth habit and generally produces several basal shoots instead of a single trunk.

Special Recreation Management Area (SRMA). An area requiring explicit recreation management to achieve BLM's recreation objectives and to provide specific recreation opportunities. SRMAs are identified in management plans that may also define the management objectives for the area. BLM's recreation investments are concentrated in these areas.

Special Status Species. A grouping of wildlife species that includes Proposed Species, Threatened and Endangered Species, Candidate Species, State Listed Species and Sensitive Species (see definitions for these terms elsewhere in this Glossary).

State Listed Species. Those proposed for listing or listed by a State in a category implying potential endangerment or extinction. Listing is either by legislation or regulation.

Stipulation. A requirement, usually dealing with protection of the environment, that is made part of a lease, grant or other authorizing document.

Threatened Species. Any plant or animal species likely to become endangered within the foreseeable future throughout all or a significant part of its range.

Terrestrial. Living on land.

Tertiary. A geologic period lasting from about 65,000,000 million years ago to 2,000,000 years ago.

Unique Waters. A program of the State of Arizona designed to protect high quality waters associated with exceptional recreation, ecologic and wildlife values. The designation requires the submission of a nominating petition with rationale for the nomination and proof of ability to monitor, maintain and manage the stream segment. The designation is approved by the Arizona Department of Environmental Quality.

Upland Vegetation. Vegetation outside riparian zones.

Valid Existing Rights. Legal interests attached to a land or mineral estate that cannot be divested from the estate until that interest expires or is relinquished.

Vehicle Trail. A track, made by the passage of vehicles, regularly used for vehicle travel. Desert washes may be included as trails if they have a history of use.

Vegetation Type. A plant community with distinguishable characteristics described by the dominant vegetation present.

Viable Population. A population of sufficient size to survive forever.

Vibroseiser Line. Method of geophysical exploration.

Visual Resources. The visible physical features on the landscape (land, water, vegetation and structures). Scenery.

Visual Resource Management (VRM). The inventory, designation and implementation of management objectives to maintain the desired scenic quality of the public lands. Management of BLM activities to mitigate adverse impacts to scenery to acceptable levels.

Visual Resource Management Classes. Classes with specific objectives for maintaining or enhancing scenic quality, including the kinds of modifications to the landscape that are acceptable to meet the established objectives.

Class I - (Preservation) Provides for natural, ecological changes only. This class includes wilderness areas, some natural areas, some wild and scenic rivers and other similar sites where landscape modification should be restricted.

Class II - (Retention of the landscape character) Includes areas where changes in any of the basic elements (form, line, color or texture), caused by management activities, should not be evident in the characteristic landscape.

Class III - (Partial retention of the landscape character) Includes areas where changes in the basic elements caused by management activities may be evident in the characteristic landscape. The changes, however, should remain subordinate to the existing landscape character.

Class IV - (Modification of the landscape character) Includes areas where changes may subordinate the original composition and character. They should, however, reflect what could be a natural occurrence in the characteristic landscape.

Water Quality. The chemical, physical and biological characteristics of water with respect to its suitability for a particular use.

Watershed. The region draining into a river, river system or body of water.

Way. See Vehicle Trail.

Wetlands. Lands including swamps, marshes, bogs and similar areas such as wet meadows, river overflows, mud flats and natural ponds.

Wild and Scenic River System. A system established by the *Wild and Scenic Rivers Act* to protect rivers and their immediate environments that have outstandingly remarkable scenic, recreation, geologic, fish and wildlife, historic, cultural or other similar values. Rivers can be designated in one of three classes:

Wild Rivers - Rivers that are free of impoundments and pollution and generally inaccessible except by trail, with essentially primitive watersheds or shorelines.

Scenic Rivers - Rivers free of impoundments, with shorelines largely undeveloped, but accessible in places by roads.

Recreational Rivers - Rivers readily accessible by road or railroad, that may have some development along shorelines and may have undergone some impoundment or diversion in the past.

Wilderness. An area formally designated by Congress as a part of the National Wilderness Preservation System. A wilderness, in contrast with those areas where man and his own works dominate the landscape, is recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. It is an area of undeveloped land retaining its primeval character and influence, without permanent improvements or human habitation, that is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable, (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation, (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition and (4) may also contain ecologic, geologic, or other features of scientific, education, scenic or historic value.

Wilderness Study Area (WSA). A roadless area or island that has been inventoried and found to have wilderness characteristics. An area to be studied to determine its suitability for designation as wilderness.

Wildlife. Animals living in the wild that have not been domesticated by humans.

Withdrawals. The closure of public lands to uses under sale, settlement, location and entry. Withdrawals limit use to maintenance of public values or reserves for a particular use or program. Withdrawals can also transfer jurisdiction of public lands to another federal agency.

Xeric. Dry areas.

References

Arizona Bureau of Geology and Mineral Technology, Geological Survey Branch. 1983. *Metallic Mineral Districts of Arizona*. Tucson, AZ.

Arizona Department of Health Services, Bureau of Water Quality Control. 1984. *Water Quality Assessment for the State of Arizona: Water Years 1982-83*. Phoenix, AZ.

Arizona Department of Mines and Mineral Resources. 1987-88. Active Mines Map. Tucson, AZ.

Arizona Game and Fish Department. 1988. Map of Game Species Densities. Phoenix, AZ.

Brown, Lowe, and Pase. 1979. *A Digitized Classification System for the Biotic Communities of North America, with Community (series) and Association Examples for the Southwest*. Journal of the Arizona-Nevada Academy of Science. Tempe, AZ.

Bureau of Land Management. 1978a. Manual 8100 - *Cultural Resource Management*. Washington, D.C.

_____. 1978b. *Upper Gila - San Simon Grazing Environmental Impact Statement*. Safford, AZ.

_____. 1981. *Winkelman Management Framework Plan*. Safford, AZ.

_____. 1982a. Manual 8340 - *Off-road Vehicles*. Washington, D.C.

_____. 1982b. Manual 8342 - *Designation of Areas and Trails*. Washington, D.C.

_____. 1983. Manual 8560 - *Management of Designated Wilderness Areas*. Washington, D.C.

_____. 1984a. Manual 8400 - *Visual Resource Management*. Washington, D.C.

_____. 1984b. Mineral Resources Policy. Washington, D.C.

_____. 1985a. Draft Guidelines: Management of Peleontological Resources. Washington, D.C.

_____. 1985b. Instruction Memorandum No. AZ-85-152, Memorandum of Understanding (MOU) Between the Bureau of Land Management and State Land Department for Land Exchange. Phoenix, AZ.

_____. 1985c. Manual 9110 - *Transportation Facilities*. Washington, D.C.

_____. 1986a. *Eastern Arizona Grazing Environmental Impact Statement*. Phoenix, AZ.

_____. 1986b. Manual 8410 - *Visual Resource Inventory*. Washington, D.C.

_____. 1987a. 43 CFR Part 1610, *Resource Management Planning*. Washington, D.C.

_____. 1987b. 43 CFR Part 3100, *Oil and Gas Leasing*. Washington, D.C.

_____. 1987c. 43 CFR Part 3200, *Geothermal Resource Leasing*. Washington, D.C.

_____. 1987d. 43 CFR Part 3400, *Coal Management*. Washington, D.C.

_____. 1987e. 43 CFR Part 3500, *Leasing of Solid Minerals Other Than Coal and Oil Shale*. Washington, D.C.

_____. 1987f. 43 CFR 3800, *Mining Claims Under the General Mining Law*. Washington, D.C.

_____. 1987g. Instruction Memorandum No. 87-274, Riparian Area Management Policy. Washington, D.C.

_____. 1987h. *Interim Management Policy and Guidelines for Lands Under Wilderness Review*. Washington, D.C.

_____. 1987i. *Safford District Wilderness Environmental Impact Statement*. Safford, AZ.

_____. 1987j. *Fish and Wildlife 2000*. Washington, D.C.

_____. 1988a. Manual 6840 - *Special Status Species Management*. Washington, D.C.

_____. 1988b. *Wilderness Management Plan, Aravaipa Canyon Wilderness, Arizona*. Safford, AZ.

_____. 1989a. *Arizona Mohave Wilderness Environmental Impact Statement*. Phoenix, AZ.

_____. 1989b. *Cultural Properties in the Gila Resource Area With Standing Architectural Structures*. Safford, AZ.

REFERENCES

_____. 1989c. Environmental Impact Statement, Vegetation Treatment on BLM Lands in 13 Western States, in preparation. Washington, D.C.

_____. 1989d. *Gila Resource Area Management Situation Analysis*. Safford, AZ.

_____. 1989e. *Safford District Fire Management Activity Plan*. Safford, AZ.

_____. 1989f. *San Pedro River Riparian Management Plan and Environmental Impact Statement*. Safford, AZ.

_____. 1989g. *San Simon Resource Area Management Situation Analysis*. Safford, AZ.

Bureau of Mines. 1986. *Availability of Federally Owned Minerals for Exploration and Development in Western States: Arizona*. Washington, D.C.

_____. 1988a. *Mineral Investigation of the Muleshoe Study Area, Cochise and Graham Counties, Arizona*, MLA 43-88. Denver, CO.

_____. 1988b. *Mineral Resources of the Aravaipa Study Area, Graham and Pinal Counties, Arizona*, MLA 38-88. Denver, CO.

Bureau of Mines and Geological Survey. 1989. *Mineral Summaries, Bureau of Land Management Wilderness Study Areas in Arizona*. Denver, CO and Menlo Park, CA.

Department of the Interior, Department of Agriculture. 1982. *National Wild and Scenic River System Final Revised Guidelines for Eligibility, Classification and Management of River Areas*. Federal Register, Vol. 47, No. 173. Washington, D.C.

Forest Service. 1986. *Environmental Impact Statement for the Coronado National Forest Plan*. Tucson, AZ.

Keith, S.B., D.E. Gest, E. DeWitt, N.W. Toll and B.A. Everson. 1983. *Metallic Mineral Districts and Production in Arizona*. Arizona Bureau of Geology and Mineral Technology Bulletin 194. Tucson, AZ.

Lindsay, Everett H. 1979. Paleontological Inventory of the Safford District. Unpublished manuscript prepared by the University of Arizona, Department of Geosciences, for the Bureau of Land Management. Tucson, AZ.

McColly, R.A. and N.B. Anderson. 1987. *Availability of Federally Owned Minerals for Exploration and Development in Western States: Arizona, 1986*. U.S. Bureau of Mines Special Report. Washington, D.C.

National Park Service. 1982. *The Nationwide Rivers Inventory, Arizona Component*. Washington, D.C.

Simons, F.S., P.K. Theobald, R.R. Tidball, J.A. Erdman, T.F. Harms, A. Griscom and G.S. Ryan. 1987. *Mineral Resources of the Black Rock Wilderness Study Area, Graham County, Arizona*. U.S. Geological Survey, 1703-C. Denver, CO.

_____. 1987. *Mineral Resources of the Needle's Eye Wilderness Study Area, Gila County, Arizona*. U.S. Geological Survey, 1703-B. Denver, CO.

Soil Conservation Service. 1980. *Soil Survey of San Simon Area, Arizona, Parts of Cochise, Graham, and Greenlee Counties*. Washington, D.C.

_____. 1981. *Soil Survey of Gila - Duncan Area, Arizona, Parts of Graham and Greenlee Counties*. Washington, D.C.

Tomida, Yukimitsu. 1987. *Small Mammal Fossils and Correlation of Continental Deposits, Safford and Duncan Basins, Arizona, USA*. National Science Museum. Tokyo, Japan.

University of Arizona. 1985. *Managing Water Quality in a Water Scarce State*. Tucson, AZ.

U.S. Geological Survey. 1984. Map Showing Mineral Resource Potential of U.S. Forest Service and Bureau of Land Management Wilderness Study Areas in Arizona. Menlo Park, CA.

Valley National Bank of Arizona. 1988. *Arizona Statistical Review*. 44th Edition. Phoenix, AZ.

Waddell, Tom. 1979. State and Provincial Status Reports, as cited in the First Black Bear Workshop, Arizona State University. Tempe, AZ.

Witcher, J.C., C. Stone and W.R. Hahman, Sr. 1982. Geothermal Resources of Arizona, map produced by the Arizona Geological Survey. Tucson, AZ.

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☆ U.S. GOVERNMENT PRINTING OFFICE: 1989—791-061/00,512 REGION NO. 10

SAFFORD DISTRICT RMP

MAP 35

Proposed Land Tenure Adjustment, Utility Corridors, and Communication Sites

LEGEND

- PROPOSED RETENTION AREAS: Public lands in these areas will, generally, be retained under the administration of the Bureau of Land Management and managed following the principles of multiple use and sustained yield. State lands in these areas will be acquired, through exchange, if available. Public lands outside these areas will, generally, be disposed of following standard environmental assessment procedures.
- PROPOSED UTILITY CORRIDORS
- PROPOSED COMMUNICATION SITES
- PLANNING AREA BOUNDARY
- COUNTY BOUNDARY

- DIVIDED HIGHWAY
- BITUMINOUS OR CONCRETE
- BITUMINOUS SURFACE TREATED
- GRAVEL
- GRADED AND DRAINED
- UNIMPROVED
- CONNECTING ROADS
- ROUTE MARKERS: INTERSTATE, U.S., STATE, INDIAN
- MILEPOST
- NATIONAL FOREST
- INDIAN OR MILITARY RESERVATION
- NATIONAL MONUMENT AND PARK
- LAND GRANT
- COUNTY SEAT
- INCORPORATED CITIES
- OTHER TOWNS OR VILLAGES
- AIRPORT: FACILITIES
- AIRPORT: NO FACILITIES

SCALE

5 0 5 10 15

STATUTE MILES

U.S. DEPARTMENT OF THE INTERIOR

Bureau of Land Management
Safford District

June 1989

Sources: Az. Dept. of Trans.
BLM Basemaps

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SAFFORD DISTRICT RMP

MAP 34

**Riparian Areas,
Proposed Watershed and Soil Erosion Treatment Areas,
and Proposed Firewood Cutting Areas**

LEGEND

- PROPOSED WATERSHED AND SOIL EROSION TREATMENT AREAS
- PROPOSED EROSION CONTROL STRUCTURES AND EXISTING STRUCTURES NEEDING REPAIR
- PROPOSED FIREWOOD CUTTING AREAS
- 27 RIPARIAN AREAS

1. Apache Creek and tributary
2. San Francisco River
3. Eagle Creek and tributaries
4. Gila River and tributaries
5. Bonita Creek
6. Johnny Creek
7. Left Fork of Markham Creek
8. Riparian areas in the Gila Mountains
9. Black Rock Wash
10. Goodwin Wash
11. Laurel Canyon
12. Deer Creek and tributaries
13. Turkey Creek
14. Oak Grove Canyon
15. Aravaipa Creek and tributaries
16. Grapevine Creek
17. Mescal Creek
18. RS Spring
19. Pioneer Creek and tributary
20. Copper Creek
21. Scanlon Wash
22. Lower San Pedro River
23. Redfield Canyon and tributary
24. Swamp Springs Creek
25. Cherry Spring Creek
26. Hot Springs Creek
27. Wildcat Creek
28. Double R Creek
29. Bass Creek
30. Robles Creek
31. Upper San Pedro River and tributaries
32. Babocomari River
33. Riparian areas in the Mule Mountains
34. Guadalupe Creek
35. Riparian areas in Bowie Mountain
36. Riparian areas in the Dos Cabezas Mtns.
37. Riparian areas in the San Simon Valley

DIVIDED HIGHWAY
BITUMINOUS OR CONCRETE
BITUMINOUS SURFACE TREATED
GRAVEL
GRADED AND DRAINED
UNIMPROVED
CONNECTING ROADS
ROUTE MARKERS: INTERSTATE, U.S., STATE, INDIAN
MILEPOST

NATIONAL FOREST
INDIAN OR MILITARY RESERVATION
NATIONAL MONUMENT AND PARK
LAND GRANT
COUNTY SEAT
INCORPORATED CITIES
OTHER TOWNS OR VILLAGES
AIRPORT: FACILITIES
AIRPORT: NO FACILITIES

PLANNING AREA BOUNDARY
COUNTY BOUNDARY

SCALE
5 0 5 10 15
STATUTE MILES

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Safford District

June 1989

Sources: Az. Dept. of Trans.
BLM Basemaps

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SAFFORD DISTRICT RMP

MAP 33

Wilderness Study Areas, Recommended Wilderness Areas, and Recommended Wild and Scenic Rivers

LEGEND

- EXISTING WILDERNESS STUDY AREAS
- EXISTING WILDERNESS RECOMMENDATIONS
- ADDITIONAL AREAS RECOMMENDED FOR WILDERNESS IN THIS PLAN
- RECOMMENDED GILA WILD AND SCENIC RIVER
- PLANNING AREA BOUNDARY
- COUNTY BOUNDARY

- DIVIDED HIGHWAY
- BITUMINOUS OR CONCRETE
- BITUMINOUS SURFACE TREATED
- GRAVEL
- GRADED AND DRAINED
- UNIMPROVED
- CONNECTING ROAD
- ROUTE MARKERS: INTERSTATE, U.S., STATE, INDIAN
- MILEPOST
- NATIONAL FOREST
- INDIAN OR MILITARY RESERVATION
- NATIONAL MONUMENT AND PARK
- LAND GRANT
- CLIFTON — COUNTY SEAT
- DUNCAN — INCORPORATED CITIES
- Morenci — OTHER TOWNS OR VILLAGES
- AIRPORT: FACILITIES
- AIRPORT: NO FACILITIES

SCALE

5 0 5 10 15

STATUTE MILES

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Safford District

June 1989

Sources: Az. Dept. of Trans.
BLM Basemaps

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NEW MEXICO

MEXICO

SAFFORD DISTRICT RMP

MAP 32

Proposed Areas of Critical Environmental Concern (ACEC) and Coordinated Resource Management Plan Areas

LEGEND

- PROPOSED ACECs
- PROPOSED COORDINATED RESOURCE MANAGEMENT PLAN AREAS
- PLANNING AREA BOUNDARY
- COUNTY BOUNDARY

- DIVIDED HIGHWAY
- BITUMINOUS OR CONCRETE
- BITUMINOUS SURFACE TREATED
- GRAVEL
- GRADED AND DRAINED
- UNIMPROVED
- CONNECTING ROADS
- ROUTE MARKERS: INTERSTATE, U.S., STATE, INDIAN
- MILEPOST
- NATIONAL FOREST
- INDIAN OR MILITARY RESERVATION
- NATIONAL MONUMENT AND PARK
- LAND GRANT
- COUNTY SEAT
- INCORPORATED CITIES
- OTHER TOWNS OR VILLAGES
- AIRPORT: FACILITIES
- AIRPORT: NO FACILITIES

CLIFTON
DUNCAN
Morenci

SCALE

5 0 5 10 15

STATUTE MILES

U.S. DEPARTMENT OF THE INTERIOR

Bureau of Land Management
Safford District

June 1989

Sources: Az. Dept. of Trans.
BLM Basemaps

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R 13 E R 14 E R 15 E R 15½ E R 16 E R 17 E R 18 E R 19 E R 20 E R 21 E R 22 E R 23 E R 24 E R 25 E R 26 E R 27 E R 28 E R 29 E R 30 E R 31 E R 32 E

T 1 N T 1 S T 2 S T 3 S T 4 S T 5 S T 6 S T 7 S T 8 S T 9 S T 10 S T 11 S T 12 S T 13 S T 14 S T 15 S T 16 S T 17 S T 18 S T 19 S T 20 S T 21 S T 22 S T 23 S T 24 S

GILA AND SALT RIVER BASE LINE

SAN CARLOS INDIAN RESERVATION

APACHE NATIONAL FOREST

CORONADO NATIONAL FOREST

TONTO NATIONAL FOREST

DESERT GRASSLANDS RNA ACEC-MESCAL RIDGE

DRY SPRING RNA ACEC

ARAVAIPA CREEK WATERSHED COORDINATED RESOURCE MANAGEMENT PLAN AREA

DESERT GRASSLANDS RNA ACEC-PILARES

ARAVAIPA CANYON WILDERNESS

TURKEY CREEK RIPARIAN ACEC

TABLE MTN. RNA ACEC

DESERT GRASSLANDS RNA ACEC-SOMBRERO BUTTE

MULESHOE RANCH COORDINATED RESOURCE MANAGEMENT PLAN AREA

SWAMP SPRINGS-HOT SPRINGS WATERSHED ACEC

BLACK ROCK RNA ACEC

BEAR SPRINGS BADLANDS ACEC

CLIFFY RANCH WILDLIFE AREA

BONITA CREEK WATERSHED COORDINATED RESOURCE MANAGEMENT PLAN AREA

CORONADO MTN. RNA ACEC

EAGLE CREEK BAT CAVE ACEC

BONITA CREEK ACEC

GILA BOX ONA ACEC

111 RANCH RNA ACEC

PELONCILLO MTNS. ONA ACEC

OOS CABEZAS PEAKS ACEC

WILLCOX PLAYA NATIONAL NATURAL LANDMARK ACEC

WILLCOX DRY LAKE BOMBING RANGE

FORT BOWIE NATIONAL HISTORIC SITE

BOWIE MTN. SCENIC ACEC

SAN PEDRO RIPARIAN NATIONAL CONSERVATION AREA

ST. DAVID CIENEGA RNA ACEC

SAN PEDRO RIVER RNA ACEC

SAN RAFAEL RNA ACEC

GUADALUPE CANYON ONA ACEC

SAN BERNARDINO NATIONAL WILDLIFE REFUGE

FORT HUACHUCA MILITARY RESERVATION

SAGUARO NATIONAL MONUMENT

SAN XAVIER INDIAN RESERVATION

Inspiration
MIAMI
GLOBE
Cutter
San Carlos
Peridot
Superior
Coolidge Dam
Calva
Bylas
Point of Pines
Arsenic Tubs
Granville
Kelvin
Riverside
KEARNY
Christmas
HAYDEN
WINKELMAN
Dudleyville
Geronimo
Ft. Thomas
Ashurst
Eden
Bryce
Glenbar
Central
THATCHER
SAFFORD
Hollywood
Solomon
San Jose
Sanchez
York
Apache Grove
Sheldon
DUNCAN
Franklin
Artesia
Cactus Flat
Swift Trail Jct.
Klondyke
Mammoth
Oracle
San Manuel
Oracle Junction
Ft. Grant
Bonita
Turkey Flat
Summerhaven
Redington
Cascabel
Tanque Verde
TUCSON
SOUTH TUCSON
Marana
Picacho
Eloy
Casa Grande
Coolidge
Florence
Kearny
Superior
Globe
Miami
Hayden
Winkelman
Willcox
Bowie
San Simon
Das Cabezas
Cochise
Kansas Settlement
Dragoon
Pomerene
BENSON
Mammoth
Tucson

R 13 E R 14 E R 15 E R 15½ E

R 28 E R 29 E R 30 E R 31 E R 32 E

T 1 N
T 1 S
T 2 S
T 3 S
T 4 S
T 5 S
T 6 S
T 7 S
T 8 S
T 9 S
T 10 S
T 11 S
T 12 S
T 13 S
T 14 S

R 16 E R 17 E R 18 E R 19 E R 20 E R 21 E R 22 E R 23 E R 24 E R 25 E R 26 E R 27 E

GILA AND SALT RIVER BASE LINE

28 29 30 31 32

33° 15'
33° 00'
32° 45'
32° 30'
32° 15'

Inspiration
MIAMI
GLOBE
TONTO NATIONAL FOREST
Superior
PINAL MOUNTAINS
Cutter
SOUTHERN PACIFIC COMPANY
San Carlos
Peridot
SAN CARLOS INDIAN RESERVATION
Point of Pines
Arsenic Tubs
APACHE NATIONAL FOREST
Maple Pk
Mitchell Mtn
Granville
Coolidge Dam
SAN CARLOS LAKE
Calva
Bylas
Kelvin
Riverside
KEARNY
Christmas
HAYDEN
WINKELMAN
Dudleyville
Geronimo
Ft. Thomas
Ashurst
Eden
Bryce
Glenbar
PIMA
Centrol
THATCHER
SAFFORD
Hollywood
Saloman
Sanchez
San Jose
Storgo
Morenci
CLIFTON
York
Apache Grove
Sheldon
DUNCAN
Franklin
GRANT
ARAVAIPA CANYON WILDERNESS
SANTA TERESA MOUNTAINS
CORONADO NATIONAL FOREST
Klondyke
CLUFF RANCH WILDLIFE AREA
Coctus Flot
Swift Trail Jct
Artesia
MAMMOTH
Oracle
San Manuel
Oracle Junction
CORONADO NATIONAL FOREST
Ft. Grant
Bonito
Turkey Flot FOREST
GILA RESOURCE AREA
Summerhaven
Redington
Hookers Hot Springs
Cascobel
WILLCOX
WILLCOX DRY LAKE BOMBING RANGE
SAN SIMON RESOURCE AREA
Bowie
San Simon
Dos Cabezas
TUCSON
SOUTH TUCSON
Tonque Verde
SAGUARO NATIONAL MONUMENT
NEW MEXICO

SAFFORD DISTRICT

MARCH 1989

U.S. Department of the Interior

Bureau of Land Management - Safford District

LEGEND

- PUBLIC LANDS
- STATE LANDS
- PRIVATE LANDS
- NATIONAL FOREST LANDS
- NATIONAL PARKS, MONUMENTS, AND RECREATION AREAS
- MILITARY RESERVATIONS
- NATIONAL WILDLIFE REFUGES

- DIVIDED HIGHWAY
- BITUMINOUS OR CONCRETE
- BITUMINOUS SURFACE TREATED
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- INCORPORATED CITIES
- OTHER TOWNS OR VILLAGES
- AIRPORT: FACILITIES
- AIRPORT: NO FACILITIES

- PLANNING AREA BOUNDARY
- COUNTY BOUNDARY

SCALE

5 0 5 10 15

STATUTE MILES

SAFFORD DISTRICT BOUNDARY

MAP AREA

N

SECTIONIZED TOWNSHIP

For More Information Contact:
SAFFORD DISTRICT OFFICE
425 E. 4th St.
SAFFORD, ARIZONA 85546
PHONE (602) 428-4040

Sources: Az. Dept. of Trans.
BLM Basemaps

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GILA RESOURCE AREA

SAN SIMON RESOURCE AREA

T 10 S
T 11 S
T 12 S
T 13 S
T 14 S
T 15 S
T 16 S
T 17 S
T 18 S
T 19 S
T 20 S
T 21 S
T 22 S
T 23 S
T 24 S

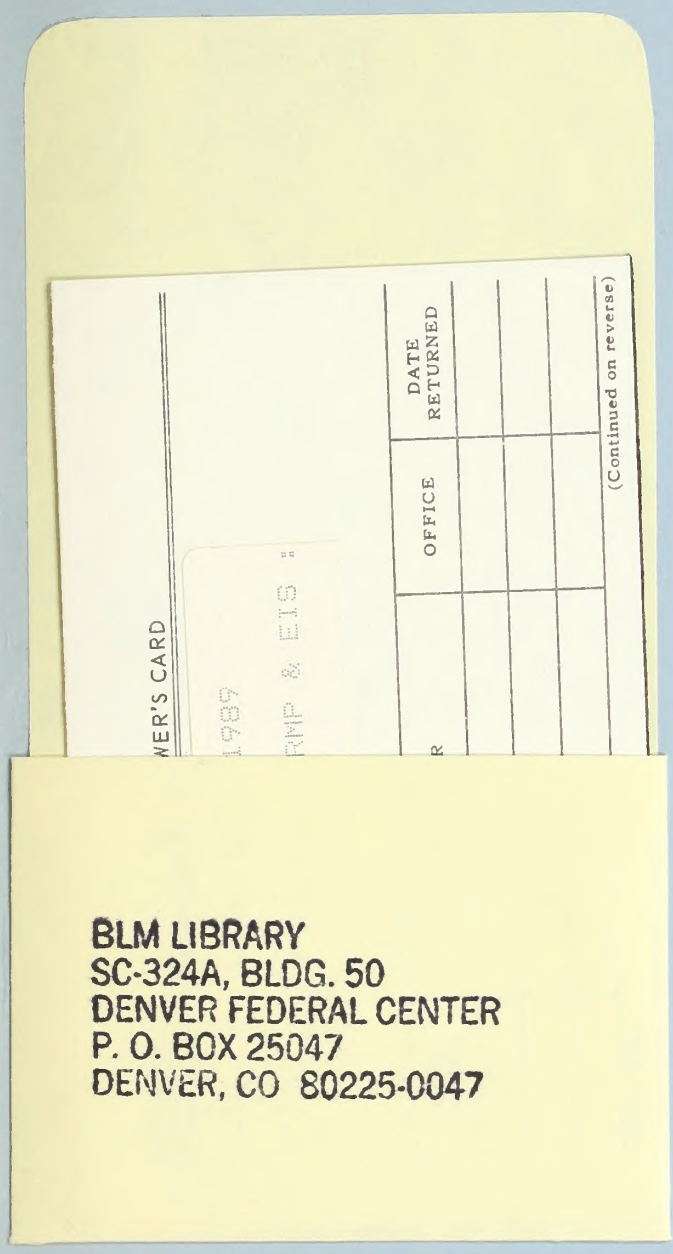
110° 30' 110° 15' 110° 00' 109° 45' 109° 30' 109° 15'

32° 30' 32° 15' 32° 00' 31° 45' 31° 30'

NEW MEXICO

HIDALGO

MEXICO



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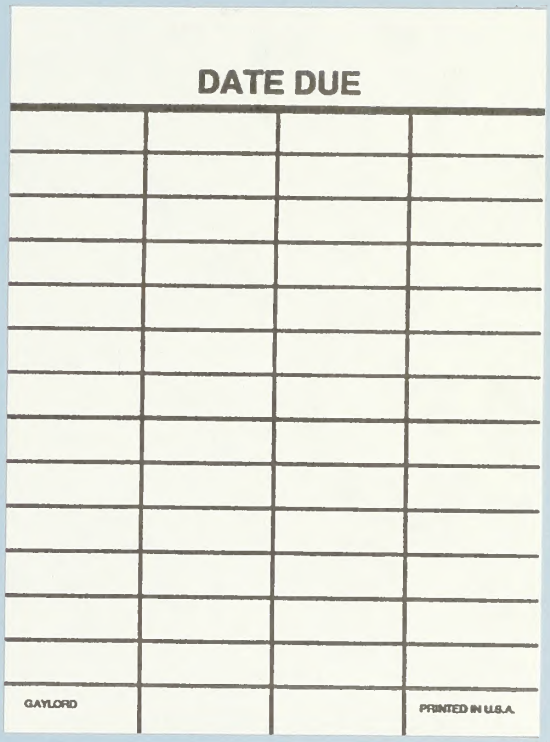

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